CANADIAN THESES ON MICROFICHE

I.S.B.N.

THESES CANADIENNES SUR MICROFICHE

National Library of Canada
Collections Development Branch

Canadian Theses on
Microfiche Service

Ottawa, Canada
K1A 0N4

Bibliothèque nationale du Canada
Direction du développement des collections

Service des thèses canadiennes
sur microfiche

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us a poor photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de mauvaise qualité.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

NL-339 (r. 82/08)

Canada

19

0-315-15929-4

National Library of Canada | Bibliothèque nationale du Canada

Canadian Theses Division | Division des thèses canadiennes

Ottawa, Canada K1A 0N4

63838

PERMISSION TO MICROFILM — AUTORISATION DE MICROFILMER

• Please print or type — Écrire en lettres moulées ou dactylographier

Full Name of Author — Nom complet de l'auteur

VALERIE MAE TOOTOOSIS

Date of Birth — Date de naissance

FEBRUARY 1, 1945

Country of Birth — Lieu de naissance

CANADA

Permanent Address — Résidence fixe

215 J MICHENER PARK,
EDMONTON, ALBERTA,
T6H 4M5

Title of Thesis — Titre de la thèse

~~THE~~ ORAL LANGUAGE ~~FOR~~ AND LEARNING OF ONE FIVE-YEAR-OLD CREE CHILD AT HOME AND AT SCHOOL

University — Université

UNIVERSITY OF ALBERTA

Degree for which thesis was presented — Grade pour lequel cette thèse fut présentée

M. Ed.

Year this degree conferred — Année d'obtention de ce grade

1983

Name of Supervisor — Nom du directeur de thèse

DAVID A. DILLON

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

Date

April 24, 1983

Signature

Valerie M. Tootoosis

NL-91 (4/77)

THE UNIVERSITY OF ALBERTA

ORAL LANGUAGE AND LEARNING OF ONE FIVE YEAR OLD CREE CHILD AT HOME AND AT SCHOOL

by

(C) VALERIE MAE TOOTOOSIS

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND

RESEARCH IN PARTIAL FULFILMENT OF THE

REQUIREMENTS FOR THE DEGREE OF

MASTER OF EDUCATION

DEPARTMENT OF ELEMENTARY EDUCATION

EDMONTON, ALBERTA

SPRING, 1983

MICRO

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR . Valerie Mae Tootoosis

TITLE OF THESIS Oral Language and Learning of One Five Year Old Cree Child at Home and at School

DEGREE FOR WHICH THESIS WAS PRESENTED Master of Education

YEAR THIS DEGREE GRANTED 1983

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or research purposes only.

The author reserves other publication rights, and neither the thesis not extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

(Signed) Valerie M. Tootoosis

PERMANENT ADDRESS:
215J Michener Park
Edmonton, Alberta, T6H 4M5

DATED March 24 1983

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Oral Language and Learning of One Five Year Old Cree Child at Home and at School" submitted by Valerie Mae Tootoosis in partial fulfilment of the requirements for the degree of Master of Education.

David Dillon

Supervisor

Dennis Kearl

Wayne Thomas Bowman

Date March 24 1983

Not let a word get in the way of its
sentence,
Not let a sentence get in the way of its
intention,
But to send your mind out to meet the
intention as a guest,
THAT is Understanding.

Chinese Proverb, fourth century,
B.C.

Dedication

TO MY FATHER AND MOTHER

who left us in the Summer of their lives,
whose curious and enquiring minds,
whose humanism, sensitivity and respect
for the fundamental competence
and innate goodness of all people
is embodied in their children
and is the Foundation upon which
this study is built.

Abstract

Statistics indicate that a chronic problem exists with regard to the education system and the Indian child. While various theories of verbal deficit and deprivation have been suggested to explain the perpetuation of this problem, some authors indicate that deficiency theories lack grounded empirical validity. Moreover, a growing body of evidence states that all children have a communicative competence and an extensive language repertoire which varies in accordance with their perception of the situation. Further, some studies suggest that while we have underestimated the language competence of the child, we have over-estimated the language demands of the school.

The child, from birth, is actively engaged in the interpreting of her experiences. Language provides a tool by which the child organizes, represents and reworks her understanding of these experiences. The purpose of this exploratory study was to investigate and describe the language for learning of one five-year-old Cree child at home and in school. To achieve this purpose, the researcher lived with the subject's family, and followed the child about her daily affairs intermittantly for approximately two months. The subject was observed and tape recorded using a small Realistic F.M. wireless microphone and a Realistic 19 AM/FM Radio Cassette Recorder. In addition, extensive field notes were

taken, describing the context and circumstance of each observational period. The child was recorded on 14 mornings in school and 14 days at home. (In total, 50-1/2 hours of recorded language were obtained and transcribed).

It was found that the child was continually using her language to interpret and infer from her experiences, to seek verification of her hypotheses and generate new interpretations in light of this experience. It was also found that through interaction with others, the child was often involved in a collaborative construction of meaning through talk. In addition, the child was observed using talk to herself (what Vygotsky calls "egocentric speech") in order to focus upon, familiarize herself with, plan, prepare and evaluate her experiences. In school, it was found that there was little specific, deliberately-structured teacher-to-child interaction. Teacher-to-child languaging when it did occur, tended to be related to the administrative, disciplinary and technical requirements of the task-at-hand. During the teacher-to-whole class lesson situation, student talk tended to be monosyllabic and generally limited in purpose. Verbal interaction tended to be characterized by the initiation-response-feedback and fill-in-the-blank discourse patterns. In contrast, it was found that, at school, during the seatwork activity, lunch and the transitional periods between activities, the children engaged in considerable talk and enquiry in a collaborative, interactive mode. This talk

appeared to be unsanctioned and unnoticed by the school authorities and therefore to be extracurricular in nature.

In general, the kindergarten program provided less depth and scope of experience than did the out-of-school environment and tended to focus on the uniformity and neatness of the product rather than the process of coming to increased understanding. The children, in contrast, appeared to bring to the program a variety of interests and experiences and to use very complex reasoning processes in a joint negotiation of meaning. The implications of the observations for curriculum development and teacher education were discussed and suggestions for further research were indicated.

Acknowledgments

My special thanks to:

Leiha, Odia and the other children for the most inspirational learning experience of my professional development,

Mikal and Darren for waiting, for caring, for the human warmth of family,

Mary for permitting this study and welcoming us into her home,

David for his faith and patience. "Yes, I can do it";

Dennis for listening, perceiving and sharing his understanding of children's language,

Carl, Regna and Tony for digging around and coming through,

Kathy for her friendship and persistent encouragement.

Table of Contents

Chapter		Page
1	Introduction	1
	1.1 Assumptions of this Study	4
	1.2 Purpose of this Study	5
	1.3 Research Questions	6
	1.4 Limitations	6
	1.5 Significance of this Study	7
	1.6 Organization	8
2	Theoretical Framework	10
	2.1 Introduction	10
	2.2 The Concept of the Child	10
	2.3 The Interpretation of Experiences	11
	2.4 Language and Experience	12
	2.5 Language and Learning	14
	2.6 Talking and Learning	16
	2.7 Language and the School	23
	2.8 Verbal Deprivation Theories	27
	2.9 Classroom Research	33
	2.10 Language In and Out of School	37
	2.11 Summary	44
3	Methodology	47
	3.1 The Design	47
	3.2 Leiha	47
	3.3 The Kindergarten	51

Chapter Page

3.4 Procedure 53

3.5 Analysis. 55

3.6 Summary 55

4 Analysis of the Data 57

4.1 Introduction to Out-of-School Languaging. 57

4.1.1 The Language Tools of Learning . . . 58

4.2 Negotiating of Meaning Through Language with Others 59

4.3 Verification of Meaning Through Inferential Questioning 65

4.3.1 Making Sense While Ironing 67

4.3.2 Making Sense of Where's Jason? . . . 71

4.3.3 Making Sense of a Number "Two" . . . 72

4.4 Noting and Describing Detail. 73

4.4.1 Pantaloon Legs 74

4.4.2 Beaded Belt Buckles. 74

4.4.3 Mommy's Jackets and Moccasins. . . . 75

4.4.4 Nice Stripes and Snowsuits 78

4.4.5 Different Drummer. 79

4.4.5.1 The Owl Call. 79

4.4.5.2 The Loon's Call 80

4.4.5.3 Watch How the Sound Goes. 81

4.5 Comparing 81

4.6 Citing Alternatives 83

4.7 Projecting and Explaining Cause and Effect. 88

Chapter Page

4.8 Sequencing 91

4.8.1 Tent Making 91

4.8.2 On the Roof of the Well 92

4.9 The Languaging of Enquiry and Experimentation. 93

4.9.1 Experimenting with the Indicator Light 94

4.9.2 Experimenting with the Bookcase . . . 96

4.9.3 Experimenting While Juice Making. . . 97

4.9.4 Enquiry Concerning Ear Wax. 101

4.10 Planning and Organizing Through Language 103

4.11 Language for Oneself - Egocentric Speech . . 108

4.11.1 Egocentric Speech While Making Sense of Phonetic Rules. 110

4.11.2 Egocentric Speech While Looking for Terry Bear 111

4.11.3 Egocentric Speech While Printing . . 111

4.11.4 Egocentric Speech While Making Sense of a Song. 112

4.12 Playing with Language. 115

4.12.1 Playing with Sound and Texture . . . 115

4.12.2 Playing with Word Meaning. 117

4.13 The Nature of Language Differences 122

4.13.1 Developmental Differences - Pseudo Concepts. 122

4.13.2 Cultural Differences - Accent and Dialect Shift. 124

4.13.3 Vocabulary Differences 126

Chapter Page

4.13.3.1 The Pitchfork Episode 126

4.13.3.2 The Septic Tank Episode 127

4.13.3.3 The Toy Dish Episode 130

4.14 Summary of Out-of-School Languaging. . . . 132

4.15 Introduction to Talk in School 133

4.15.1 The Distribution and Nature of Leiha's Language Within the School Program 133

4.15.2 The Observed School Program. . . . 134

4.16 Leiha's Talk During Teacher-to-Whole-Class Interactional Situations 141

4.17 Leiha's Talk Within Small Group Situations 155

4.17.1 Making Sense with "Piggy". 158

4.17.2 Scientific Enquiry in Small Groups 174

4.17.3 Enquiry While Waiting Concerning Teeth, Beaks and Gorilla's Noses. 178

4.17.4 Enquiry into Print as Message. . . 185

4.17.5 Enquiry into Zero and the Letter O 187

4.17.6 Making Sense of Drunks While Weaving. 191

4.17.7 Making Sense of Plants on Doors and Windows. 194

4.17.8 Enquiry Concerning the Meaning of "Metsuk". 195

4.17.9 Enquiry Concerning "A Statue Car?". 198

Chapter Page

4.17.10 Making Sense of Blue Teeth 200

4.17.11 Making Sense of the Microphone. 202

4.18 Leiha's Talk with Self - Vygotsky's "Egocentric Speech". 207

4.18.1 Egocentric Talk While Playing with a Puzzle 210

4.18.2 Egocentric Talk While Beading. . . 212

4.19 Summary of Talk in School. 215

4.20 Comparison of Leiha's Language at Home and at School. 218

5 Summary, Conclusions and Implications. 222

5.1 Summary of the Study. 222

5.1.1 Question #1. 222

5.1.2 Question #2. 224

5.1.3 Question #3. 227

5.2 Conclusions of the Study. 228

5.3 Discussion of the Results 229

5.4 Suggestions for Further Research. 233

5.5 Concluding Statement. 234

References. 235

List of Tables

Table		Page
1	Successful School Completion for Treaty Indian Students	2
2	Time Distribution during Classroom Observation	136
3	Bar Graph of Time Distribution During Classroom Observation	138
4	Frequency and Distribution of Responses During Opening Exercises.	154

Chapter 1

Introduction

In statistics cited by the Indian Association of Alberta, 94 to 97 percent of Indian students compared with 12 percent of non-Indian students fail to reach Grade 12 (Indian Chiefs of Alberta, 1970, p. 78). More recent statistics published by the Department of Indian Affairs and Northern Development state that the percentage of Indian students remaining in school until Grade 12 continues to be less than 25% of the national average (1982, p. 49). The following table depicts the perpetuation of this phenomena over a ten year period preceding 1976. In addition to an extremely high dropout rate is a continual high incidence of absenteeism and age-grade deceleration amongst Indian students in both the federal and provincial school systems. During the 1981-82 school year, the rate of attendance within the kindergarten involved in this study averaged from 87.9 to 49.1% monthly.

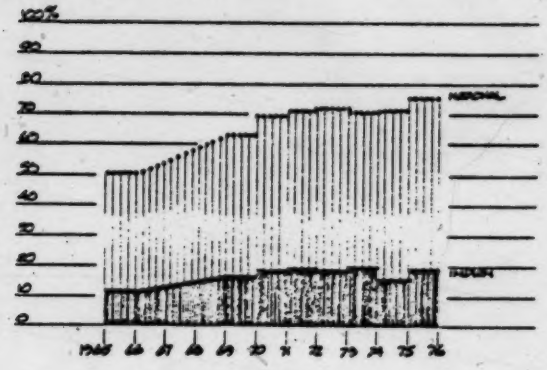
Although statistics indicate that a severe problem exists between the education system and the Indian student, there is little research that addresses itself to the possible causes of the problem. Many studies, in attempting to account for poor performance figures, have proceeded from the assumption that there is a deficiency within the child and his home environment or that there is a discontinuity between the child's home and school experiences such that might

POOR PRINT
Epreuve illisible

Table 1

Successful School Completion for Treaty Indian Students

% Students Remaining to Grade 12 from Grade 2, Ten Years Earlier



sources:
(1) *Education in Canada*, Cat. no. 81-229, Statistics Canada
(2) Re-calculation of Table E-1, E-11 in "Socio-Economic Forecasts for Registered Indians in Canada 1976-77 to 1989-90," by D.E. Stewart, P.R.E., DIAND, 1977

Successful school completion (retention) among Indian students has improved modestly in the last 15 years (particularly between 1965 and 1970), but the Indian rate remains less than one-quarter of the national rate.

(D.I.A.N.D., 1982, p. 49)

explain the child's cumulative failure rate and eventual official departure from the system. Often cited as a cause of many children's lack of success in school are theories of language deficit or deficiency. Indian children are presumed to receive little verbal stimulation at home. Such was the explicit assumption in a major survey of Indian conditions authorized by the Department of Indian Affairs in the late 1960's.

> Indian children do receive stimulation but the variety is limited to a narrow spectrum in comparison with that available to most non-Indian children. . . . Conversations between adults and children are often

> limited; questions are answered in monosyllables (Hawthorn, 1967, pp. 112-113).

Although written more than 15 years ago, Hawthorn's assumptions are still quite commonly accepted by some educators today. When offered as a causal factor for poor success in school, empirical evidence to support such statements is seldom presented. In other studies developing out of a deficiency perspective, when language data is provided, it is often elicited in an experimental-type situation which some researchers suggest samples only the child's language in an unfamiliar, artificial or threatening situation. Such language samples cannot be assumed to be a valid indicator of the child's language performance in a more natural situation at home or at school.

In contrast to the deficiency model, a growing body of research and theory has questioned what Labov (1972) has called "the myth of verbal deprivation". His work, and that of a number of other researchers in linguistics, sociolinguistics and education, support a growing body of evidence which indicates that all children not only have a communicative competence, but an extensive language repertoire which varies according to their perceptions of a situation and mood of the moment.

Not only have assumptions regarding language deprivation been called into question but so has the corresponding assumption - that the demands of the school are beyond the competencies and experience of many children, particularly

those from the lower socioeconomic strata. The work of a number of researchers strongly challenges this assumption. Analysis of classroom talk appears to indicate a predominance of whole-class teaching characterized by a predictable discourse pattern that reflects a transmission mode of teaching and limits pupil participation in their own learning. Edwards (1982) suggests that previous research has "simultaneously underestimated the children and overestimated the demands of the school" (p. 9).

In addition, numerous researchers are now questioning the basic assumptions reflected in deficiency explanations and transmission modes of learning, assumptions concerning the nature of learning and our conception of the child.

1.1 Assumptions of this Study

This study begins from the assumption that the child is an active participant in her own learning. Further, it is assumed that learning involves the active participation of the child in the interpretation of her experiences. Through interaction with the environment around her, the child is actively engaged from birth until death in the interpretation and construction of representations of her experiences. The child's representations of reality form the basis of her knowledge and the stepping stones from which further knowledge will develop.

From the work of Vygotsky (1962) we further assume that language plays a very important role in the child's ongoing

construction of meaning. As the child speaks she is able to externalize her representations of reality and to hear and act upon these representations. As the child develops and interacts, her "personal meanings" influence and are in turn influenced by those of other children and adults. Learning involves this constant interpretation and reinterpretation of one's experiences. Often, in the process of talking, it is assumed that the child is exploring, familiarizing, clarifying and reconstructing her understandings.

1.2 Purpose of this Study

The purpose of this study is to explore and describe the language for learning of the five-year-old Cree child at home and in school. Specific attention will be directed to describing the nature and circumstances of the child's inquiry and the language strategies she uses to increase her understanding. Attention will also be directed toward a comparison of the child's languaging behavior within the home and school contexts.

In an effort to obtain as valid a sample of the child's natural language as possible, the researcher:

1) selected a child that was related to the researcher and appeared comfortable in the presence of the researcher,
2) used a small, wireless FM microphone that caused minimal disruption to the child's normal activity and allowed the researcher to remain some distance

from the observed activity,

4) transcribed the language recorded on the audio-tapes to provide grounded data for the descriptive analyses and discussion.

1.3 Research Questions

1) What is the nature and circumstances of the child's enquiry at home and at school?
2) What language strategies does Leiha use to shape her experiences at home and at school?
3) What are the similarities and differences found regarding the nature and circumstance of the child's enquiry outside and within the school environment?

1.4 Limitations

1) Because this study focuses upon the language and learning of one child, caution in generalizing or extrapolating from the results is called for.
2) Although it appeared that the presence of the researcher and the audio-recording equipment was quickly forgotten by the subject and did not appear to influence her languaging behavior to any significant degree, it may have influenced the languaging behavior and involvement of the mother, teacher and teacher-aide with the child.
3) Although 60 hours of tape-recorded conservation was gathered and analysis of the language uncovered

recurrent patterns, the range and variety of language milieu sampled was not as extensive as that experienced by the child. It may have increased the depth of the analysis to have sampled the child's languaging behavior in interaction, for example, with her kokom (grandmother) or other close family members.

1.5 Significance of this Study

As human beings, we all have a need to feel competent. To cope, survive and develop from birth is evidence that each of us is competent. My experience as a mother and teacher of Indian students for 15 years suggests that most Indian children, upon entering school, are generally curious, active, competent and enthusiastic to learn. In contrast, many Indian students leave or drop out of school having gained limited literacy skills and, perhaps more importantly, a low sense of self-worth. What happened?

The education statistics cited for Indian students are staggering. Taken together with mortality and suicide statistics,[1] particularly for those in the 15 to 24 year group, the situation is alarming, tragic and immoral. As we

---

[1] The number of Indian deaths due to suicides. . . is almost three times the national rate. Suicides account for 35 percent of accidental deaths in the 15-24 age group. . . . (Department of Indian Affairs and Northern Development, 1980 p. 19).

Alberta Indians aged 15 to 19 die at a rate four times the provincial average and those aged 30 to 34 die at a rate eight times the provincial average (Edmonton Journal, November 25, 1982, p. 2).

teach children that come from these circumstances so we are affected. As we have taught children that end their lives here so we are involved.

The situation necessitates investigation. This study is one attempt to observe, describe and analyze the languaging behavior of one Cree child at home and in school in an effort to provide some insight regarding the nature and circumstance of the child's attempts to increase her understanding in both contexts. Description and analysis of a child's in-school experience is vital if we are to eventually understand and correct our approaches to teaching. In the words of Willard Wallar, "Whatever contributes to the understanding of human life must one day contribute to its reconstruction" (Edwards and Furlong, 1982, p. 155).

1.6 Organization

This study is divided into six chapters. Chapter 1 provides a brief overview of the purpose, assumptions and significance of this research.

Chapter 2 provides a survey of the theoretical and empirical literature that influenced the assumptions upon which this study is built and the interpretation of the empirical data.

Chapter 3 provides a description of the design and procedures followed in this study. An overview of the context within which the data was gathered and a description of the collection and treatment of that data is presented.

Chapter 4 provides a representative sample of the empirical data gathered and an analysis and interpretation of the transcriptions in light of the theoretical framework.

Finally, Chapter 5 provides a discussion of the main findings and the conclusions drawn from those findings.

In conclusion, the implications of the study for future research and for classroom organization are discussed.

Chapter 2

Theoretical Framework

2.1 Introduction

This chapter will explore an interactive concept of the child, the interpretation of experience, the ordering and understanding of experience with the aid of language, the role of language and talk in learning, the specific relationship of language to learning in school, verbal deprivation theories and their relationship to language and learning research into language in the classroom and at home.

Britton (1970), drawing together theories from psychology, philosophy, anthropology and linguistics, developed a model of language and learning. His work and that of Vygotsky (1962) and Barnes (1976) provide the main theoretical basis for this study.

2.2 The Concept of the Child

Britton's (1970) conception of the active child, the representer, the anticipator, the hypothesis tester striving to extend and improve her predictions, is fundamental to his theory and this study. Kelly (1955) develops an analogy of man as a scientist formulating hypotheses, testing and relating outcomes to what was anticipated and finally cautiously generalizing or revising in the light of

experience. Britton (1970), like Kelly, believes that children actively and creatively explore and interpret, that this fuels their development and that talk with others is the principle instrument to qualitative changes in the child's mental processing (pp. 92-93). Wells (1979) in his description of the communication situation, emphasizes the interactive and purposive nature of both the speaker and listener's collaborative negotiation and construction of meaning.

2.3 The Interpretation of Experiences

One of the basic tenets of the present study is that learning involves the interpretation of new information. Our previous experiences form the basis upon which we interpret new experience and our language provides both the organizational structure and the means by which this process develops.

"Experience", as we use the term here, is not simply all life's events but our representation of these events. We borrow this conception of experiencing from Britton (1970), who, in turn, was influenced by Kelly's (1963) personal construct theory. Kelly writes,

> Experience is made up of the successive construing of events. . . . It is not what happens around him that makes a man's experiences, it is the successive construing and reconstruing of what happens (p. 18).

Britton (1970) conceives of man as constantly constructing representations of the world, the cumulative

result of which Britton calls our "world representation". Each individual creates for himself, over a period of time, his own "world representation" based upon his personal experiences and individual personality.

Our "world representation" is the basis upon which, Britton states, "we generate expectations concerning the future, expectations which . . . enable us to interpret the present" (p. 12). We enter each new experience armed with expectations, and in the process confirm, modify or refute these expectations. Britton's "representations" are similar to Kelly's "personal constructs", the patterns or templates man creates in order to make sense of the world. Kelly (1963) states:

> Man looks at his world through transparent patterns or templates which he creates and then attempts to fit over the realities . . . without such patterns the world appears to be such an undifferentiated homogeneity that man is unable to make any sense of it (pp. 8-9).

Fundamental to this study, then, is the assumption that children actively interpret new experiences in light of their previous experiences and world views and that they do this in the process of coming to increased understanding.

2.4 Language and Experience

Our representations of the world not only influence how we perceive and anticipate, but, by the very act of representation, we render experience to consciousness and are able to examine it in retrospect. As Britton (1970) states, "Events take place and are gone: it is the representation

that lasts and accumulates and undergoes successive modification" (p. 18).

Britton (1970) cites Edward Sapir when he states that language is one of the key ways of representing experience. In the process of symbolizing reality, we are ordering, familiarizing and thereby mastering what would otherwise remain undifferentiated confusion. Language provides us with an instrument with which we partition and categorize experience. Words become generalized representations, classifying as they represent.

It is this resultant "generalized reflection of reality", focused at the word level, that is, to Vygotsky, the essence of "word meaning" and thought. "Meaning", Vygotsky states, "is an inalienable part of a word and as such belongs to the realm of language as well as thought" (p. 5). He further proposes that word meaning has an affective, as well as a cognitive component "a transmitted affective attitude" which unites to form a dynamic system of meaning. In the act of naming and talking we are reflecting our reality, we are categorizing our experience and we are generalizing from this reality.

Britton (1970) states that there is not a predetermined world order, that every language brings its own ethnocentric order to reality. A child comes to categorize experience in much the same way his parents, and, in turn, his community does. This corresponds with Vygotsky's notion of language, conceived of as a linguistic tool which, together with the

socio-cultural experience of the child, predetermine thought development.

Vygotsky (1962) states:

> The language of the environment with its stable, permanent meanings, points the way that the child's generalizations will take . . . along this preordained path in the manner peculiar to his level of intellectual development. The adult cannot pass on to the child his mode of thinking. He merely supplies the ready-made word around which the child forms a complex (p. 68).

2.5 Language and Learning

The evolutionary nature and function of word meaning as conceived by Vygotsky has implications for the way in which the child learns. Initially conceived as the property of an object, words allow us to label experience, to relate similar experience to that label, and, finally, in the process of using words, to come to increased understanding.

Word meanings are not static but evolve. The initial learning of a word, as Vygotsky states, is only the beginning in a process toward increasingly more abstract generalizations.

Vygotsky traces the development of word meaning toward concept formation, dividing the ascent into three separate phases, each further divided into several stages.

During phase I, word meanings denote an unorganized, unstable conglomeration of objects, what Vygotsky refers to as "syncretic heaps".

Later, during the second stage, the child begins to think in what Vygotsky calls "complexes". Describing five different stages of thinking in complex, Vygotsky states that:

> In a complex, individual objects are united in the child's mind not only by their subjective impression, but also by bonds actually existing between these objects (p. 61).

The last stage, developed only at puberty, is what Vygotsky calls true concept formation, the ability to logically synthesize abstracted traits.

Vygotsky not only stresses the importance of words as a mediating agent between experience and thought, but he underlines the importance of the interpersonal aspects of speech as the soil where word meanings develop from relatively primitive beginnings to increasingly higher generalizations (p. 85).

From language functioning to symbolize experience and the ongoing enhancement of meaning, Britton (1970) talks about the interpretive function of language. Britton states: "Interpretation implies making something of the new . . . modifying the total picture towards being consistent with the new" (p. 73). Barnes (1976), like Britton, adopts Bruner and Piaget's metaphor of "knowledge as a series of systems for interpreting the world" (p. 22).

In the process of what Piaget calls "assimilation "what we perceive through our senses is filtered through our interpretive schemes, what Britton calls our "world representation". While we are simultaneously modifying our interpretive schemes, thus ensuring more adequate future expectations - this process is what Piaget termed "accommodation". Barnes (1976) states:

> By the simultaneous action of assimilation and accommodation, the events are perceived as meaningful and, at the same time, generate changes in the interpretive procedures. These changes are transformations, not additions (p. 23).

Barnes sees learning, in terms of transformations, as occurring not only in interaction with new sense data, but through communication with others.

2.6 Talking and Learning

Language then, does not only provide a framework or structure for experience, but is itself one of the most important instruments for learning. Talk facilitates our organization and interpretation of particular events and their incorporation into our world view. We talk, and in so doing, we relate an event to our prior experiences and make sense of it.

Barnes (1976) stresses the importance of language that allows us to reflect upon our thoughts. In the process of talking, we are mirroring our thoughts, we are, Barnes states, "not only receiving knowledge, but remaking it for ourselves" (p. 20). Barnes (1972) states elsewhere that the "very act of verbalizing new knowledge often requires a reorganization of the old and the new together" (p. 113). Barnes cites Bruner's analysis of the differences in processing required by the talker as opposed to the listener:

> A speaker, in order to express a logically connected sequence of ideas, has to select, organize and relate them at each point of choice . . . he must operate more or less complex criteria which he will not normally make explicit or even be aware of. A listener, on the other

> hand, may be able to follow a speaker through a logically connected sequence without being in the least aware of the many options . . . or of the criteria which inform the speaker's choice. He will only learn to operate these criteria when he himself becomes a speaker (p. 114).

Talk that allows one to work one's way into a problem, to monitor thought and reshape it, is what Barnes (1976) terms "exploratory talk". It is characterized by "frequent hesitations, rephrasings, false starts and changes of direction" (p. 28). Barnes would argue that exploratory talk is essential whenever the learner wants "to take an active part in learning and to bring what he learns into interaction with that view of the world on which his actions are based" (p. 28).

Barnes suggests further that the hypothetical mode sustains exploratory talk by keeping the enquiry open. He suggests that the learner can take more responsibility for formulating and evaluating explanatory hypotheses when he is allowed to control his own language strategies and think aloud. If we assume that learning involves the grasping of underlying principles, then it is of prime importance that "the learners have an opportunity to talk with others in order to go back over experiences and represent it to themselves" (Barnes, 1972, p. 30).

Britton (1970) makes a distinction between talk in the role of "participant" and talk in the role of "spectator". Language of the participant, language to get things done while participating in the world's affairs, Britton calls

"transactional language".

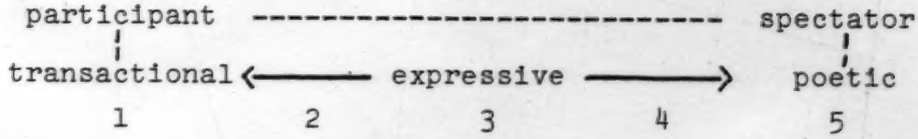
In the role of spectator, however, one is "on holiday from the world's affairs". One's relative detachment and freedom from the demands of participation allow one to contemplate, to enjoy, to evaluate an experience more comprehensively. It is in a spectator role that we assimilate and accommodate new experience, that we operate upon our representation of an event and interpret and modify it according to "the way I feel".

One morning during the study, while sitting at a table visiting, one of the children in the kindergarten lapsed into the role of the spectator and, in an expressive-poetic mode, contemplated her grandmother's (kokom's) dog, Tinky.

> Everytime when I sit down at my kokom's house
> I just hear the table shakin'
> And then when I look down
> It's Tinky shakin'
> She's dyin' - Tinky
> Her dog.
>
> Roshie (April 5, 1982)
> (2, 1, 499)

The language of the spectator Britton calls "poetic language". In the poetic mode the form of language becomes important as it aids in the savoring of feeling and the exploring of values.

Britton (1970) depicts the principle modes of language in the participant and spectator role thus:



On Britton's language function continuum, what he calls "expressive language" is in the middle. It is what Goodhall (1977) calls "the matrix" and what Rosen (1973) calls "the soil" from which the roots of the transactional and poetic functions grow. It is language "close to the self", loosely structured, relaxed, self-presenting, self-revealing, not aimed at accurate explicit reference nor polished performance (Barnes, Britton and Rosen, 1969).

Martin et al., (1976) feel that the importance of expressive language lies in the fact that it is the "nearest-to-hand language needed to net and give initial shape to the transcient flow of ideas . . . new learning situations and first formulations - first drafts of new thinking" (p. 17).

Martin et al., (1976) further state the importance of expressive language for the translating and fitting of new experience into existing knowledge. They state that the sorting out of experience in one's own language "is the nearest one can come - in the initial stages - to one's own thinking" (p. 17).

Rosen and Rosen (1973) also say of expressive language that:

> Unless the child has had an opportunity to talk in this way and to hear her voice saying it to someone, she will not be accustomed to hearing the voice-in-her-head when she's not talking to someone else (p. 47).

Goodhall emphasizes three important functions of expressive language. Firstly, he reiterates its importance for learning. Expressive language is the child's own. It is

the language with which he feels confident and from which his early learnings develop. It is the source from which more abstract and sophisticated language will grow.

Secondly, expressive language is the language by which we share ourselves, we establish rapport, we build accepting relationships. The collaborative humanism of expressive language encourages exploration, reformulating and hypothesizing. It at once assumes the safety of acceptance and moves out to conquer the unknown.

Finally, through expressive language, Goodhall states, we influence one another. "A complex pattern of influence deriving from all and affecting each emerges from the flow of expressive talk" (p. 19).

In an article entitled From Information to Understanding, Martin (1973) describes the process by which two twelve-year-old boys use talk to come to a deeper understanding of new information. Quoting from transcriptions of the boys' talk, Martin describes how, in the act of having to put new information to use, previously acquired knowledge is reconsidered in relation to the new situation, misconceptions are revealed and acknowledged and, when possible, hypotheses are proposed to resolve inconsistencies.

Martin suggests that children need opportunities to talk through their understandings, to hear and "kick around" other points of view. This is best done using a flexible expressive language in the context of genuine communication with a sympathetic and interested audience. She further states that:

> We can't really be said to know something until we've made it part of our own way of thinking and explored its implications. . . . Often this involves shaking up and reorganizing a whole system of ideas by which we explain the world to ourselves (p. 12).

Vygotsky traces the development of thought and speech. He states that speech and thinking originate independently of one another, that thought is initially nonverbal and speech nonintellectual. He describes the subsequent and interrelating development of thought and language as "a process, a continual movement back and forth from thought to word and from word to thought" (p. 125).

Fundamental to Vygotsky's thesis is his belief that talk does not merely communicate or express one's thinking but that speech influences the structure and determines the development of thought.

> The structure of speech does not simply mirror the structure of thought. . . . Thought undergoes many changes as it turns into speech. It does not merely find expression in speech; it finds its reality and form (p. 126).

Not only is talk with others important for learning, but so too is talk for oneself. The talk of the child in solitary play is what Vygotsky called egocentric speech or "speech for oneself". Unlike the child's first speech, derived from and in the form of social speech, speech for oneself does not require a listener and functions to aid and support the child's activities and organize his experiences. As the child develops, states Britton (1970), his social speech,

> . . . becomes better communication while speech for oneself becomes less communicative, more individualized, better able to serve the particular purposes and

interests of the child (p. 57).

Vygotsky's view of originally undifferentiated social speech developing in two distinct directions contrasts with Piaget, who sees egocentric speech being replaced by a more mature form of social speech.

Vygotsky (1962) states that:

> . . . to interpret the sinking coefficient of egocentric speech as a sign that this speech is dying out, is like saying that the child stops counting when he ceases to use his fingers and starts adding in his head. In reality, behind the symptom of dissolution lies a progressive development. The birth of a new speech form (p. 135).

Vygotsky believes that out of social speech, egocentric speech evolves, becoming increasingly individuated and abbreviated eventually not to wither away but to become internalized as "inner speech".

Vygotsky states that inner speech has distinct and specific characteristics and functions. He defines inner speech as "speech for oneself . . . speech turn(ing) into inward thought" (p. 131). Egocentric speech, in comparison, Vygotsky defines as the precursor of inner speech, a vocalized and audible speech form with similar intellectual function and structure, that disappears around school age when, he infers, it changes into inner speech. Vygotsky further states that the very fragmentary nature of speech for oneself is both appropriate and indicative of its ongoing adaptation to what Bruner (1962) describes as the "internalization of external dialogue that brings the powerful tool of language to bear on the stream of thought" (p. vi).

Mapping a highly dynamic and complex interrelation between activity and egocentric talk, Vygotsky describes the role of egocentric speech first following activity, then accompanying and reflecting action and, finally, preceding action, directing and guiding the child's acts toward more purposeful behavior. Vygotsky states:

> The function of egocentric speech is similar to that of inner speech. It does not merely accompany the child's activity; it serves mental orientation, conscious understanding; it helps to overcome difficulties; it is speech for oneself, intimately and usefully connected with the child's thinking (p. 133).

Vygotsky states that at three years of age there are no structural or functional differences in the quality of egocentric and social speech, but that by seven years the child's egocentric speech is quite unlike social speech in structure and function. Initially, egocentric speech accompanies and is dominated by the child's activity. Later, it becomes an instrument of thought, "seeking and planning solutions to problems." Vygotsky (1978) states:

> Initially speech follows actions, is provoked and dominated by activity. At a later stage . . . speech guides, determines and dominates the course of action; the planning function of speech comes into being in addition to the already existing function of language to reflect the external world (p. 28).

2.7 Language and the School

With regard to the relationship between language and learning within the school, Vygotsky (1962) distinguishes between spontaneous and scientific concepts, the former being "the child's ideas of reality developed mainly through his

own mental efforts" (p. 84), the latter, a more systematic knowledge originating from adult instruction. Vygotsky stresses the importance of instruction in modeling and thereby influencing a more advanced structuring of thought, instruction which "marches ahead of development and leads it . . . aimed not so much at the ripe as the ripening functions" (p. 104). The introduction of scientific concepts through instruction provide the child with a classification system to which he can relate his personal experiences and from which he can gradually transform and organize his spontaneous concepts toward higher developmental levels.

In addition to influencing the structure of learning, language within the school continues to play an important role in learning itself. It is the role of language as a means to learning and its embodiment in the communicative climate of the classroom that is the focus of Barnes' (1976) model of language and learning within the school. Although speaking mainly in reference to secondary school children, Barnes' model is relevant to a study of language and learning at the primary school level.

Barnes argues that communication is part of curriculum, that talk and writing are the major means by which we learn and that "what we learn can often hardly be distinguished from the ability to communicate it" (p. 20). In the act of learning, pupils have to interpret what they hear and see from what they already know. There exists no other means of interpretation. Barnes states "whenever school learning goes

beyond meaningless rote, we can take it that a child has made some kind of relationship between what he knows already and what the school has presented" (p. 23).

Barnes (1976) sees language entering the curriculum through the classroom communication system as devised by the teacher and through the individual child's strategies for learning.

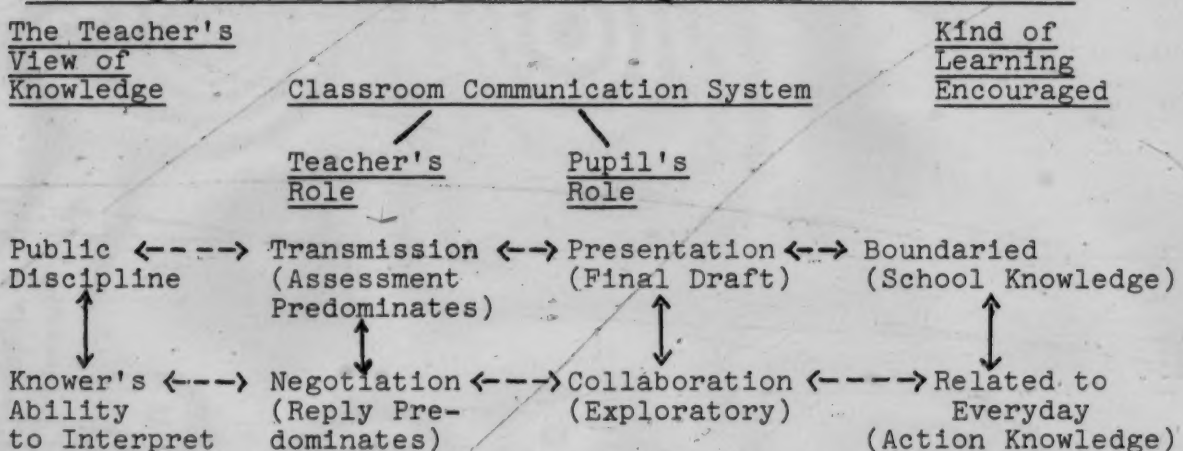
Whether the child is allowed to play an active part in the formation of his own knowledge will depend, according to Barnes, upon the intentions and expectations he brings to the class and the patterns of communication established by the teacher.

In developing his model of communication and curriculum, Barnes makes distinctions between:

1. the transmission vs. the interpretation of knowledge
2. the assessment vs. the understanding of student interpretations
3. the presentation vs. the sharing of knowledge
4. final draft speech vs. exploratory speech.

Barnes depicts his model thus:

Knowledge, Communication and Learning - A Hypothetical Model



(Barnes, 1976, p. 146)

Barnes stated that "the teachers implicit view of knowledge and his responsibility for it carried implications for the social order . . . and for the learning behavior open to his students" (p. 126). He further states, "A view of knowledge is likely to carry with it a view of classroom communication and of the roles of the teacher and pupil in formulating that knowledge" (p. 139).

A teacher's view of knowledge, Barnes states, falls along a continuum from interpretation to transmission.

The interpretation teacher views knowledge as resulting from the child's active participation in the assimilation and accommodation of experience. Exploratory talk, as improvisation accompanying the re-arrangement of one's thoughts, follows as the most appropriate tool for learning. Barnes further believes that the exploratory mode is more likely to be encouraged where a teacher's replies imply acceptance and understanding, if not agreement, and where the teacher and learner are in a collaborative relationship.

The transmission teacher, conversely, visualizes knowledge as a body of accumulated learning outside the child which must be transmitted to him. Following from this, the teacher's role in assessing the amount of knowledge transmitted is emphasized, which consequently encourages the student to present his learnings in a prematurely formal, complete "final draft" form.

Barnes (1976) writes:

> A classroom dialogue in which sharing predominates over presenting, in which the teacher replies rather than

> assesses, encourages pupils when they talk and write to bring out existing knowledge to be reshaped by new points of view presented to them (p. 111).

If the pupil perceives the teacher as primarily concerned with assessment, he may present a facade, concentrating on external display rather than exploratory talk requisite to relating new knowledge to old in formulating meaning.

Barnes cautions, however, that:

> To advocate an interpretation view of education is not to argue that teachers should never present knowledge to their pupils, but rather to imply that certain patterns of communication should follow the presentation as pupils negotiate their own ways of grasping the knowledge presented (p. 149).

Barnes further states that "Demands for final drafts prematurely is asking the child to arrive without having travelled" (p. 118). This study hopes to focus on the nature of this travel outside and within the school system.

2.8 Verbal Deprivation Theories

> Definers (that is, persons who insist on defining others) are like pathogenic micro-organisms: each invades, parasitizes, and often destroys his victim; and, in each case, those whose resistance is low are the most susceptible to attack. Hence, those whose immunological defences are weak are most likely to contract infectious diseases; and those whose social defences are weak - that is, the young and the old, the sick and the poor, and so forth - are most likely to contract invidious definitions of themselves (Szasz, 1974).

Related to language and learning in the school, such terms as "culturally disadvantaged", "verbal deprivation" and "non-verbal" continue to be used in attempting to explain the relatively poor performance and high drop-out rate of lower class children in school.

During the present study, one of the teachers in the school where the observations were conducted, expressed her belief that many children lacked language skills and that a study of language would likely reveal a correlation between lack of success in school and poor language. This would appear to be a commonly held belief among a number of school personnel and suggests a widely held view that the language of children from lower socio-economic groups is unsuitable for the intellectual and cognitive requirements of the classroom and the cause of their difficulties in school.

The work of Bernstein (1971, 1973), particularly his earlier work, and Bereiter and Englemann (1966) have been two main sources for verbal deprivation theories.

Bernstein (1971) suggests that there are measurable differences between middle and working class language facility due to differing family types, communication patterns and modes of speech. This results in a distinct and different orientation to and structuring of experience and may, according to Bernstein, partially explain difficulties in school.

In his conceptualization of restricted and elaborated code, Bernstein defines the concept of code as a "regulative principle controlling speech realizations in diverse social contexts" (p. 12).

Restricted or elaborated code, according to Bernstein, is inferred from observable speech. He states:

> Restricted speech variants are context-dependent, give rise to particularistic orders of meaning, where

> principles are verbally implicit or simply announced; whereas elaborated speech variants are context-independent, give rise to universalistic orders of meaning, where principles are made verbally explicit and elaborated (p. 15).

From the results of an eleven-item interview schedule administered to 50 middle class and 50 working class mothers, Bernstein and Henderson (1969) argue that middle class parents emphasize the autonomy of the child and encourage an active role in learning. This, it is suggested, encourages the middle class child, unlike the working class children, to see alternatives and a range of possible interpretations. The working class parents, in contrast, are thought to hold a more didactic concept of learning and consequently to assign to their children a more passive role in learning. This, the authors believe, may encourage the acquisition of skills rather than underlying principles (p. 38).

Research conducted by Hawkins (1969) and Robinson and Creed (1968) into the relationship between language use and the social background of a group of five-year-olds, developed out of and was felt to substantiate Bernstein's theory.

Hawkins (1969), in a study of 124 middle class and 139 working class children, found that working class five-year-olds, when asked to tell a story from or describe a set of picture cards, used statistically significant more pronouns, particularly third person and exophoric items. Hawkins felt that such results "may well have important cognitive consequences" (p. 91), due to what he felt to be the reduction of "possibilities of both modification and qualification" of

the pronoun referent.

Stubbs (1976) criticizes Hawkin's interpretations, arguing, amongst other things, that a more implicit language is less redundant in a situation where both child and researcher can see the referent.

Robinson and Creed (1968) found that middle class five-year-olds, in their performance on six picture card tasks, asked more questions and used more expressions of uncertainty than did their working class counterparts, indicating, they believe, more awareness of uncertainty, possible alternatives and range of interpretation.

Bereiter and Englemann (1966) describe further what they felt are "the major deficiencies in learning that are characteristic of disadvantaged children." Having stated that "language is apparently dispensible enough in the life of the lower class child for an occasional child to get along without it altogether" (p. 31), Bereiter and Englemann go on to state that:

> From what is known about verbal communication in lower class homes, it would appear that the cognitive uses of language are severely restricted . . . what is lacking by comparison is the use of language to explain, to describe, to instruct, to inquire, to hypothesize, to analyze, to compare, to deduce and to test. And these are the uses that are necessary for academic success (p. 31).

Numerous authors have argued against the theories of Bernstein and Bereiter and Englemann (Trudgill, 1976; Stubbs, 1976; Labov, 1969; Edwards, 1976, 1980, 1982; Giles, 1980).

Trudgill (1976) develops the argument that there is

nothing inadequate in the language of normal children, that all languages and dialects are complex and structured linguistic systems displaying some accent, grammatical and vocabulary differences but equally capable for expressing logical thought.

Giles (1980) points to increasing studies indicating sociolinguistic equivalence of differing varieties of English (Edwards, 1979, Robinson, 1979), stating that nonstandard dialects have been shown to be just as complex, rule-governed and rich modes of abstract expression as the so-called standard dialects (p. 673).

Labov (1969) and Trudgill (1975) question the validity, from a linguistic perspective, of the terms "restricted" and "elaborated" codes stating that linguistic characteristics cited as examples of these codes are stylistic differences.

Edwards (1976), in studying the language of middle and working class children, found a greater range of registers within individual speech repertoires than between groups in response to various communicative tasks.

Numerous authors (Stubbs, 1976; Trudgill, 1976; Labov, 1969; and Edwards, 1980, 1982) question the lack of linguistic data published with Bernstein and Bereiter and Englemann's work and the effect on linguistic performance produced by the formal interview and testing situational factors inherent in experimental designs.

Giles, Hewstone et al., (1981), in their studies of speech accommodation, state that it is now a basic tenet of

sociolinguistics that people modify their speech styles according to whom they are talking to, the topic, context and their subjective definition of the situation.

One of the chief critics of the deprivation theorists has been Labov (1969). Having studied the spontaneous language of inner city New York Blacks and Puerto Ricans in naturalistic social contexts, Labov states that:

> The concept of verbal deprivation has no basis in social reality: in fact the Negro child in the urban ghettos receives a great deal of verbal stimulation, hears more well-formed sentences than middle-class children and participates fully in a highly verbal culture. They have the same basic vocabulary, possess the same capacity for conceptual learning and use the same logic as anyone else who learns to speak and understand English (p. 179).

Citing an example of an interview situation in a ghetto school, Labov states that the monosyllabic responses of the child are an avoidance device in reaction to "an asymmetrical situation where anything he says can literally be held against him" (p. 185). He states further that "if one takes this interview as a measure of the verbal capacity of the child, it must be as his capacity to defend himself in a hostile and threatening situation" (p. 185). A comparable "safety in silence" example is described by Dumont in his paper regarding the Oklahoma Cherokee (Dumont, 1972).

In addressing the question of concept formation and dialect differences, Labov (1969) documents verbatim transcriptions of two arguments and concludes that the argument conducted in the nonstandard vernacular was, in this instance, less verbose and more logical, precise and decisive

than the argument conducted in standard English.

Labov cites two serious and damaging consequences of the verbal deprivation theories. Firstly, referring to the Rosenthal studies (1968), it stigmatizes and labels certain children as incapable of logical thought. Secondly, states Labov, "it diverts attention away from the real defects of our educational system to the imaginary defects of the child" (p. 180).

The former concern appears to be substantiated by studies (Williams, 1976; Ryan and Carranza, 1977; J. Edwards, 1979) which indicate that teachers tended to rate children's performance in relation to how confident-eager they appeared to be and how nonstandard-ethnic they sounded.

Edwards (1982), in citing the work of Fishman and Lauders-Salmon (1972) concurs when he states that different varieties of standard English are only a barrier to learning where they are viewed with ignorance, intolerance and insensitivity by the teacher or where they are used by the student to distance himself from the teacher. This appears to relate to the convergence and divergence factors in Giles' (1980) theory of speech accommodation.

2.9 Classroom Research

Like Labov, a number of writers (Edwards, 1980; Edwards and Furlong, 1978; Stubbs, 1976) have questioned both language deficiencies associated with the socially disadvantaged and the actual demands of the classroom.

Studies of classroom interaction have documented that teacher-talk dominates much of the language of the classroom - in one study 62 to 83% during oral English lessons (Pooley, 1977). Flanders (1970) found that 68% of classroom talk consisted of teacher asking questions and following-up student responses. Jackson (1968) stated that teacher-talk occupied approximately 70% of the total classroom time per school year.

Not only do teachers appear to dominate talk within the classroom, but the qualitative nature of this talk appears to be questioned by a number of studies. A highly standardized and predictable mode of discourse characterized by a teacher-initiation-student response-teacher follow-up sequence has been found in several studies (Bellack et al., 1966; Sinclair and Coulthard, 1975; Edwards and Furlong, 1978; Mehan, 1979, MacLure and French, 1981; Dillon and Searle, 1981).

Not only does classroom research suggest that teachers dominate talk in a routine pattern, but several studies suggest that a considerable proportion of this time is spent in administrative, organizational and disciplinary matters. Delamont (1976) found that 50% of teacher talk was directed toward discipline and control. Boydell (1974) found that 40% of the talk of primary students was in relation to organization and discipline.

Not only do some studies suggest that a large proportion of talk in school is concerned with matters peripheral to the development of knowledge, but, in relation to this, that students' ideas were rarely expanded (Hughes, 1976; Kluwin,

1979) and that students were seldom required to interpret or justify their responses (Bellack et al., 1966).

Edwards (1980) questioned whether situational constraints inherent in much of the classroom discourse studies limit student access to "flexible, analytical and integrative cognitive strategies". A study conducted by Searle (1981), found few instances where students had an opportunity to relate and link their spontaneous concepts acquired out of school with the scientific concepts advanced by school (p. 271). In a similar instance, Hughes (in Barnes, 1976) found what appeared to be an avoidance of students' use of language for learning. She found that:

> Students' questions, explorations and personal experience were most frequently rebuffed or ignored. Little attempt was made to build generalizations, ask for comparisons, look at alternatives or look at consequences (p. 173).

Within their own study of resource-based learning, Edwards and Furlong (1978) found that although teaching had become more individualized, it had not significantly reduced teacher transmission and control of meaning. They state further that:

> Teachers assume meanings will not be shared until they have been taught. Pupils assume a complementary ignorance suspending their own knowledge until they have located the teacher's frame of reference and can begin to move towards it (p. 148).

Dillon and Searle (1981), in their study of the role of language in learning in the context of one "good" first grade classroom, found interaction patterns that were dominated by teacher-talk and required limited pupil language use. This,

they felt, reflected teacher control of student learning, the transmission of knowledge and an exclusion of pupil language and experience.

They observed, in fact, that, from the teacher's perspective, pupil language appeared to interfere with classroom business and be viewed as having limited learning value. Pupils had little opportunity to remake new knowledge, to recode new information in their own language or relate it to their previous experience. Rather, pupils were usually asked to give limited responses within the teacher's predetermined frame of reference and, if necessary, to suspend their own perspective in order to focus upon that of the teacher's.

Edwards (1980) summarizes discourse features which appear in both the infant and secondary school classroom. Pupils must listen at length, talk on demand, recite knowledge, and respond to teacher initiatives, bid properly for communicative space, elicit and use clues to answer teacher questions, and accept teacher rights to begin, end and summarize discussion and to allocate, interrupt, correct or evaluate turn-taking (pp. 2-3). Edwards (1982) states further that:

> Pupils rarely encounter demands to challenge the information being presented to them, to explore alternatives, or to test out their own solutions to problems. Insofar as hypotheses are formulated, conclusions drawn and generalizations constructed, then these complex activities are likely to be the responsibility of the teacher (p. 512).

He suggests that in a situation where there exists a sharp division between in and out-of-school knowledge, where

the transmission mode predominates and where there exists an asymmetrical and hierarchically-ordered power relationship, the reciprocal construction of meaning (Wells, 1978) and the nurturing of dialogue (Silva et al., 1980) are extremely restricted, if not impossible.

2.10 Language In and Out of School

Few studies have attempted to look at the language of children, both in and out of school, utilizing a naturalistic and interactional approach.

Dillon and Searle (1981), in their study of a "good" grade one class, were able to record two of the children and obtain a relatively naturalistic and representative sample of the children's home talk. In contrast to their classroom observations, Dillon and Searle found that the two children used "a more extensive range of syntax, vocabulary, purpose and conversation skill" (p. 326), that out-of-school interaction patterns were less one-sided, that children often initiated talk, repeatedly extended and clarified meanings, talked more expressively, used more diverse sentence patterns and, in some exchanges, talked at greater length. They conclude by stating that:

> The classroom language code more closely resembles Bernstein's (1973) notion of restricted code, while the out-of-school code used by children is closer to his notion of an elaborated one. If this is so, the widely-held assumption that children succeed or fail in school in large part because of their lack of ability or lack of language is questioned. On the contrary, it seems that the limited code required in school fails to utilize the children's full range of language and

learning abilities (p. 327).

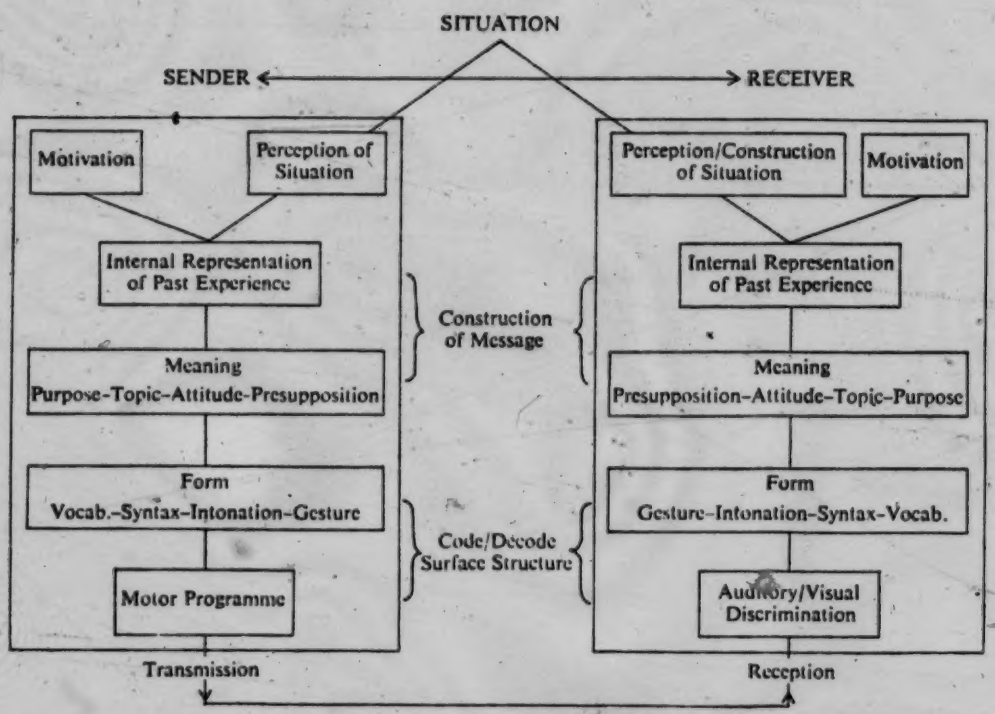
Searle (1981), in his study of adolescence in the lower east end of London, found that adolescents primarily structured their experiences and stored their knowledge in a narrative form. Through the narration of episodes the adolescents were able to assess their knowledge, shape it, interpret it and come to a fuller understanding. Searle found that unsolicited generalizations were unusual in the talk he recorded. He found a surprising number of topics dealt with in school did overlap with out-of-school experience. However, the use of objective and impersonal subject terminology, and the classification systems of established disciplines to organize familiar experiences, rendered that experience "unrecognizable". Searle states, "The objective language served to shut out everyday experience by depersonalizing the experience presented" (p. 272). Searle found little attempt made in school to bring the two differing organizational structures together.

Perhaps one of the most comprehensive language research studies, utilizing a naturalistic and interactional approach, has been the Bristol Longitudinal Language Development Research Program which investigated and described the spontaneous language interaction of 128 children at home and at school, over a two-and-one-quarter year period. The children were recorded every three months by means of a radiomicrophone and tape recorder system that was preprogrammed to record 24 90-second language samples daily,

every 20 minutes between 9:00 a.m. and 6:00 p.m. The children included in the study were equally represented according to sex, four socioeconomic status groups and four seasons of birth.

The data collected was analyzed to take account of the syntactic, semantic and pragmatic aspects of language. The recorded language was analyzed in relation to the situational context, the speaker's intended purpose, topic and expressed attitude, as well as the surface structure in which these intentions were realized.

Wells (1979) illustrates the communication situation, as conceptualized by the study thus:



A model of the communication situation

Wells (1979) describes the joint construction of meaning of both the sender and receiver of an utterance. He states that a speaker, according to his purposes and perception of a situation, formulates a "meaning intention". This meaning intention is made in light of the speaker's previous experiences and internalized representation of the world. This meaning intention is comprised of the speaker's intended purpose, his attitude to the receiver, the topic of conversation and his judgments regarding the receiver. The speaker constructs a message, using those lexical items, syntactic structures, intonational patterns and gestures available to him.

Similarly, comprehension of the speaker's message by the listener involves the listener's perception of the situation in light of his past experience and current purpose. The listener, like the speaker, constructs a meaning, drawing upon his perception of the situation, his interpretation of the purposes of the message, the topic of conversation and, finally, his attitude and presuppositions regarding the situation. These expectations then are set up and verified according to the listener's perception of the precise semantic, syntactic, intonational and accompanying gestures of the received linguistic message. In this way, Wells attempts to diagram and explain the joint construction of meaning that forms the basis of linguistic interaction and comprehension.

Although analyses of the data in the Bristol study is

not complete and Wells (1979) urges that results must be treated with caution, a number of findings to date appear relevant to this study.

Recent findings of the study appear to support the idea that the quality of the child's linguistic experience, what Wells calls the "mutual relevance" of his previous conversational interaction, rather than individual socioeconomic status, is more strongly associated with the rate of language development. Wells (1979) states:

> through participation in dialogue in which meaning is negotiated, the child learns to control some of the formal systems that allow speech to be made relevant to the situational and interpersonal context (p. 85).

When the child has not had essential experience of jointly constructed meaning-making, where there is not a cooperative endeavor to achieve mutual understanding, the child may be learning "not to listen nor to adjust the expression of her own meanings to take account of the needs of others" (p. 85). Wells (1979) further states that:

> One of the most important dimensions of variation, both at home and at school, is the quality of the adult-child interaction that the child experiences. Certainly there is variation between homes . . . there is also variation between teachers . . . in their willingness to accept and develop the children's contributions (p. 87).

In a partial replication of Tough's (1977) investigation into the development of meaning, Wells (1977) found no clearcut relationship between language use, social class and educational success. Wells criticized the Tough study for insufficient emphasis upon the interactional aspect of

communication, for a distorted comparison of polarized socioeconomic groups and, finally, for the subjective, arbitrary and doubtful reliability of applying Tough's functional classification of language use.

Using language samples from four boys and four girls from each of four socioeconomic groups using data collected from the Bristol Language Study, Wells (1977) found that it was not the differential frequency of logical reasoning or other complex functions that distinguished children, but "the presence or absence of genuine reciprocity and collaboration" (p. 20) in their languaging experiences. Wells further stated that it was the aspect of "sharing" that appeared to be of crucial importance in the "negotiated construction of shared meanings" (p. 21) and this could not be attributed to the experiences of children in any one socioeconomic group in particular.

Wells (1978), in a further description and comparison of children's experiences of talk at home and at school, found a number of important aspects of their conversational experiences at home that appeared to lead to their effective use of language. He cites:

1. A warm responsiveness to the child's interests and a recognition of the child as an autonomous individual with valid purposes and ways of seeing things.

2. Negotiation of meaning and purpose in the joint construction of an intersubjective reality.

3. An invitation to the child to consider the immediate present in a wider framework of intention and consequence, feelings and principles (p. 19).

Wells found further that home talk was distinguished from school talk in three other aspects. In the home, Wells (1978) found that:

1. Most of the conversations are initiated by the child (70 percent was the figure in one analysis),
2. It is sporadic, arising spontaneously from the interest of the moment,
3. It ranges widely over the whole of the family's shared experience, both inside and outside the home (p. 19).

In contrast, Wells cited examples where the child in the school had relatively less control of her language, particularly in the initiation of interchange. The nature of the demands made by the school allowed for little direct, personal involvement by the child in a shared or self-initiated activity. Citing in-school language episodes that were characterized by a high proportion of teacher-initiated questioning, where teachers already knew the answer, where only one answer was acceptable, and where questioning was often directed toward the child least likely to know the answer, Wells questioned whether the range of linguistic demands made by the school were appropriate to either the child or the long-term aims of education.

He questioned how far teacher-directed, closed questioning practices and Teacher Initiation-Pupil Response-Teacher Feedback routines could contribute to the independent, active and enquiring attitude essential for learning and the reciprocal negotiation of meaning. Wells further wondered what impact such models of reality have on the pupil's

orientation toward knowledge and style of interpersonal interaction. He suggested that a greater range and flexibility in the style of teacher-pupil interaction was essential, that at times the teacher-child relationship should be that of collaborators, where interaction is truly reciprocal and where tasks are "sufficiently open-ended for the relevance of the children's contributions to be negotiated as the talk proceeds" (p. 36).

2.11 Summary

Theoretical and research studies suggest and this study assumes that children actively and enthusiastically participate in their own learning. That is, the acquisition of knowledge can only result from the ongoing interpretation of one's experience in relationship to one's previously acquired understanding and frames of reference. It is further believed that language plays a very important role in learning.

If word meanings function as a tool that at once reflect, direct and symbolize our development, if egocentric speech is contingent upon and develops out of social speech, if thought is connected to words through inner speech which evolves out of egocentric speech no longer vocalized, but streamlined, individuated and gone underground, the implications for the importance of talk to ourselves and with others is fundamental to both the nature and process of ultimate concept formation and increased understanding.

Several authors (Britton, 1970, Barnes, 1976; Rosen and Rosen, 1973; Martin, 1973) have stressed the importance in talk in school, talk that allows us to externalize and remake our understandings. Wells stresses the importance of the collaborated construction and negotiation of meaning and its significance in the acquisition of language and the ongoing development of meaning.

The assumptions and empirical validity of the deprivation theories have been questioned. Linguists have cited evidence, indicating the complexity and functional ability of all linguistic systems for expressing logical thought. They have cited a basic tenet of sociolinguistics - that people modify their speech styles in accordance with their definition of the situation. A monosyllabic response, for example, may simply reflect a defensive posture to a threatening situation.

Classroom interaction studies and some home-school comparisons of language use have been reviewed. Research indicates that, in many traditional classrooms, teacher-talk dominates. A highly predictable mode of discourse characterized by a teacher initiation-student response-teacher follow-up sequence is found and that a considerable proportion of classroom time is spent on administrative, organizational and disciplinary matters. Further, some studies appear to indicate that students are seldom required to expand, interpret or justify their responses and in some instances, must suspend their knowledge in an effort to discover the teacher's frame of reference.

A comparison of out-of-school language indicated that children initiated more talk, repeatedly extended and clarified their meanings, used a range of sentence patterns and talked at greater length than was observed in school (Dillon and Searle, 1981). Searle (1981) found that although numerous out-of-school experiences overlapped with topics dealt with in school, the terminology and classification systems used in school tended to depersonalize experience, rendering it unrecognizable. The Bristol Language Study emphasized the importance of children having had experiences in the joint construction of meaning. In a comparison of home and school talk, Wells (1978) also questioned whether the linguistic demands of the school were appropriate for the aim of education. In conclusion then, what appears to be questioned in a number of studies is not the language abilities of disadvantaged children, but the communicative situation within the classroom.

Edwards (1980) states:

> I believe it reasonable to argue from studies of classroom interaction that there is a situationally-constrained disposition to use language in a limited way and that traditional classrooms seem to offer pupils few opportunities . . . to generalize, shape hypotheses and use them to explore and evaluate alternative meanings. . . . Nor is it at all clear from classroom research that "traditional" teaching makes principles and operations verbally explicit or encourages students to adopt a reflective stance towards the knowledge offered to them, both of which are among the necessary conditions for a predominance of elaborated codes (p. 8).

Chapter 3

Methodology

3.1 The Design

The major purpose of this study was to document and analyze the language of a five-year-old Cree child at kindergarten and in her out-of-school environment. The researcher was particularly interested in observing the nature and circumstance of the child's use of language to come to an increased understanding of her world. It was important to the validity of this study that the language samples obtained were as representative as possible of the child's natural language used in each context. It was also important that the analyses have sufficient scope and flexibility to deal with, what Edwards and Furlong (1978) call "the distribution of meaning along a wide spectrum of talk." The situationally embedded nature of meaning in context required that an ethnographic approach be adopted for this study. Alternatively, as a "passive" and a "participant" observer, the researcher recorded and observed the child in an attempt to see the realities of the situation as they appeared to Leiha and those with whom she was involved.

3.2 Leiha

The subject of this study was a five-year-old Cree

girl. Leiha was selected as the focus of this study because she was the niece of the researcher. It was felt that the subject chosen for the study had to be someone who was familiar with the researcher in order that taping in the home and at school would create minimal disruption to the normal routine and the child's natural flow of language.

Leiha was considered by her teacher to be a "bright" child. During the study she appeared very active, confident and articulate. She received the best achievement award at her kindergarten graduation shortly after the data collection was complete. Whether the fact that she was the focus of this study had any bearing on this is not known.

Leiha is the youngest of four siblings. At the time of the study, she lived at home with her mother, two older brothers, aged 20 and 16, and one niece, Odia, aged five years. Odia, in fact, is the daughter of Leiha's second eldest sister who is married and lives on another reserve. Because they are of similar age and have been raised together since birth by Leiha's mother, Leiha and Odia are, in the Cree tradition, essentially sisters and will be referred to as such throughout the study. (This is not to say that Leiha and Odia are not both aware of their precise relationship. They are, and explicitly stated so on a number of occasions during the study). Leiha's eldest sister, aged 23 years, is married and lives in Calgary.

Although there was mainly a core of five individuals living at Leiha's home during the study, there were also,

from time to time, various other friends and extended family members that visited briefly or stayed for varying periods of time.

Leiha's cousin, his wife, and two children lived at Leiha's home for several months until they moved to a neighboring house where Leiha and her family had originally lived. Leiha's two elder sisters, the oldest with her infant daughter, stayed for several days after the death of a cousin and again on several other happier occasions when they came to attend a pow-wow, rodeo, birthday, anniversary, or other family or community celebration . The researcher and her two sons stayed at Leiha's home for periods of one day to two weeks while visiting, and later, specifically to conduct the study. Several other cousins stayed at Leiha's home for extended periods. At the time of writing, there are two teenaged cousins living at Leiha's home, assisting Leiha's mother with the housework, babysitting and work at the cafeteria. Leiha's mother is a single parent and works as the manager of a cafeteria in the tribal administration building.

Leiha interacted and talked during the course of the study with a host of cousins, aunts, uncles, kokoms (grandmothers) and moosooms (grandfathers), customers and employees at the cafeteria and friends of the extended family. She encountered and talked to people at home, at the cafeteria, while visiting and shopping, while attending feasts and funerals, wakes and weddings, pow-wows and bingos,

birthdays, anniversaries, and other celebrations within the extended family.

Leiha, like most children on the reserve, has a very large family, most of whom she sees frequently. She has, in fact, 20 uncles and 20 aunts, 69 first cousins, at least 6 grandparents, 35 second cousins (children of her first cousins whom she also calls cousins), 5 brothers and sisters and 2 nieces and nephews. Besides this, she has innumerable other kokoms (grandmothers) and aunts and cousins that are actually sibling, cousins and aunts of her mother, father and grandparents. Although it is less pronounced with Leiha than with her mother and grandparents, Leiha is aware of her precise relationship to her uncles, aunts, grandparents, and first and second cousins. When she met someone new or was not quite certain of the existence or degree of relationship to a more distant and extended family member, she often enquired of her mother or other relatives and they would explain the precise relationship to her. On at least three separate occasions during the study, Odia enquired of Leiha whether a particular child in school was related to them.

At approximately 6:30 to 7:00 each morning prior to attending kindergarten, Leiha and Odia travelled with their mother to the cafeteria where they stayed until their mother drove them to kindergarten at approximately 9:00 a.m.. At 11:30, after kindergarten, Leiha and her sister were usually bussed to their home or that of another extended family

member. They were cared for in the afternoon while mother was working or on various evenings, holidays or week-ends when their mother was out, by family friends, older siblings, aunts, cousins or other extended family members.

3.3 The Kindergarten

The kindergarten Leiha attended during the study was housed in a large, attractive brick building containing three separate kindergarten classrooms and an open area play/music room. Three groups of children attended the morning program and three other groups of children attended the afternoon programme. Leiha and her sister attended the morning programme, from 9:00 until 11:30.

During the first two days of observation in the classroom, Leiha was taught by the teacher aid. Leiha's teacher resumed her duties on the third day of the school observation and continued for the duration of the study. Leiha's classroom teacher indicated that she had had an operation and had been ill for several months. This may explain why both Leiha and her mother had referred to the teacher aid as the classroom teacher. At the time of the study and up until the last two days of observation, another class in the kindergarten was also without its regular classroom teacher. It appeared that a substitute teacher was in charge of this class.

In one of the classrooms a kindergarten timetable was posted thus:

9:00 - 9:15	Opening Exercises
9:15 - 9:45	Readiness
9:45 - 10:00	Story
10:00 - 10:15	Lunch
10:15 - 10:45	Guided Play
10:45 - 11:05	Gym - Mrs. J. - Monday
	Language - Mrs. A. - Tuesday
	Total Group
	Activities - Wednesday
	Native Culture - Mrs. P - Thursday
	Total Group - Friday
11:05 - 11:25	Music
	Games
Teachers:	Mrs. J.
	Mrs. P.
	Mrs. S.

The teachers' names, as posted, did not include Leiha's teacher but rather the name of the teacher aid, together with the other two classroom teachers. The only aspect of the timetable that appeared to be in effect during the observational period was the 10:00 to 10:15 lunch period.

Observation throughout the kindergarten and discussion with the teacher indicated that the three classrooms generally followed a similar daily programme, centering around similar trace, cut and paste or mimeographed worksheet activities. Examples of similar butterflies, turtles, flowers, birds, etc. were found posted throughout the

building.

Leiha's teacher, a married woman with a family, was a member of the reserve community. She lived and had been raised near the school. She had just completed her teacher education within the previous five years.

3.4 Procedure

Leiha was observed and tape recorded with a small Realistic FM Wireless Microphone and a Realistic 10 AM/FM Radio Cassette Recorder. Initially, Leiha was not aware of the function of the small black box clipped to her clothing. She gradually became more cognizant of the fact that she was being recorded but this did not appear to interfere with her interest at the moment. She might make some observation about the microphone or tape recorder, for example, and then proceed with an activity, appearing to have forgotten about them.

When the child was sedentary, or when the audio-reception was poor, the condenser microphone on the radio recorder was used to record talk. This was necessary, for example, when Leiha was digging snow in the back yard in close proximity to a main power line or when she was near electrical equipment in the kitchen at the cafeteria.

In addition to the tape recording, the researcher took extensive field notes, describing in detail the context and circumstance of each observational period.

Leiha was recorded from early April until late May.

She was recorded on 24 different days. A total of 50 sixty minute audiotapes were recorded. From these, 50 and ½ hours of recorded language was obtained, approximately 1,440 minutes in school and 2,010 minutes out-of-school. Leiha was recorded on 14 different mornings in school and 14 days at home. On four days, she was recorded both at school and at home. The total school time was distributed across the school week thus. She was observed and recorded on:

2 Mondays

3 Tuesdays

3 Wednesdays

4 Thursdays

2 Fridays.

The observational period was interrupted on two occasions when Leiha was ill with hepatitis and when there was a death in the family.

For part of the study, the researcher slept at Leiha's home. This allowed her to begin taping the child from the time she awoke in the morning. The researcher accompanied Leiha, in her mother's car, to the cafeteria and taped her there, prior to school. When the researcher did not sleep at the subject's home, she met Leiha at the cafeteria at approximately 7:00 a.m. and taped her there, as well as in the classroom. On two weekends during the study, the researcher and her two young sons, aged 7 and 10 years, visited at Leiha's home for a three and four day period. Taping and observation of the children continued during

these two visits.

3.5 Analysis

Upon completion of the data collection, the researcher listened to the audiotapes repeatedly in order that she might identify patterns and describe "chunks" of meaning-making that appeared typical of the data collected. After an initial listening period, the tapes were transcribed and particular "chunks" noted for their relevance to the research questions posed. It took approximately six to eight hours to transcribe each tape. The intense focus required for the transcription appeared to increase the perception of detail and the noting of less obvious meaning-making. The researcher noted and played particular parts of the audiotapes to two members of the faculty on an ongoing basis over a two month period. This aided the clarification and validation of the analyses in progress. Aspects of talk that were incorporated into the study were coded according to the number of the tape, the particular side referred to and the numbers indicated on the tape counter at the beginning and conclusion of the excerpt (for example 34, 1, 268-241).

3.6 Summary

In summation, then, this study utilized a naturalistic approach in an effort to obtain a representative sample of the language of a five-year-old Cree child at home and in school. With the aid of field notes and audiotapes

obtained with an F.M. wireless microphone clipped to the child's clothing, the researcher attempted to identify and describe verbatim episodes of the child's use of her language to make, rework and extend her meaning in both contexts.

Chapter 4

Analyses of the Data

4.1 Introduction to Out-of-School Languaging

Leiha was observed and recorded continuously interpreting and inferring meaning from her experiences. She was observed actively involved in conversation with others, in initiating and controlling her own questioning strategies and contributing to the topic being discussed. In an analysis of her talk she was observed comparing, citing alternatives, explaining cause and effect, and projecting into the future. She used her language to enquire and make sense while with others and while alone. She used talk to help her organize and control situations to her advantage. She consistently appeared to be a generalizer rather than a narrator of experience (Searle, 1981) to analyze, synthesize and generalize meaning from an event rather than to simply narrate an event in antecdotal fashion.

Although the study did not focus on the nature and extent of Cree cultural charactistics influencing Leiha's language behavior, her play with language and the manipulation of the phonological and semantic aspects of words had a distinctly cultural quality. Similarly, she exhibited a range of accent and dialect registers which appeared to have specific meanings and to fluctuate in accordance with the situation, the circumstances and the individuals with whom she

spoke.

4.1.1 The Language Tools of Learning

Tough (1973) discusses the need for children to have the "tools for learning" if they are to benefit from education. She cites, as the language tools and strategies for learning, the examination of detail and relationships, the skills of logical argument, the examination of a range of possible solutions, anticipation and planning (p. 126).

Tough (1973) further argues that the disadvantaged child comes from a home situation that "does not foster the explorative uses of language; these children have learned to look to the adult for instructions, they have learned not to question but to accept the order of things" (p. 125).

From the analyses of the data in this study, it would appear, quite to the contrary of Tough's assumption, that Leiha displayed an extentive range of language strategies for ordering, clarifying and making sense of her experiences. Furthermore, she was observed utilizing a range of cognitive strategies through language, with little adult direction. Typical of traditional Cree child-raising practices, Leiha was allowed considerable scope to explore and interact in an environment full of family and rich in activity. Leiha appeared to enquire, plan, compare, describe, sequence, explain, cite cause and effect, state alternatives, project, and infer regularly in the course of going about her business and conducting her daily affairs.

4.2 Negotiating of Meaning Through Language with Others

When observed in talk with adults and other children out of school, Leiha usually appeared to be actively involved. She often initiated topics and when listening to others would usually contribute to the conversation. In order that her contributions be congruent with the topic being discussed, it was necessary that she constantly listen to the ideas expressed and associate, compare and integrate them with her own prior understandings. The essential fact that her contributions were congruent and that, through a verbal exchange, they resulted in a successful negotiation of meaning, would indicate the validity of her interpretations (Wells, 1981). Because she was in control of her own talk, she was able to decide for herself what information she needed to clarify and ensure understanding. There appeared to be few situations in which she was not free to join in. Like many native families, many activities tended to involve family members of either sex and varying ages. Access to and inclusion in numerous and varying activities provided opportunities to talk with others and, through such talk, to organize her own thoughts and gradually develop an understanding of alternate viewpoints in relationship to her own.

One morning, after having travelled to Leiha's kindergarten class and finding that she was absent, the researcher drove to Leiha's home and found both Leiha and her

mother ill with hepatitis and the flu, respectively.

Deciding to visit for awhile and help with the dishes, the researcher spent an enjoyable hour-and-a-half in conversation with Leiha's mother, Leiha and her sister Odia.

During that period the topics of discussion, recorded on 45 minutes of tape, ranged from:

1. toy dishes - initiated by Leiha.
2. new neighbours (Leiha's cousin and her family) across the road - initiated by the researcher.
3. a pending marriage in the family - initiated by Leiha's mother.
4. a comparison of 10 Speed and Dirt bikes - initiated by the researcher.
5. a debate over whether the researcher's son was 'solid and husky' (the researcher's point of view) - or 'fat and heavy' (Leiha's point of view) - initiated by Leiha.
6. a trip with Kokom (grandmother) to the second-hand store - initiated by Leiha.
7. the prevention of hangnails - initiated by Leiha.
8. a recent blizzard - initiated by Leiha's mother.
9. a barbeque at Sarcee - initiated by Leiha.
10. an inlaw's new home - initiated by Leiha's mother.
11. an examination and description of some family photographs - initiated by Leiha's mother.
12. comments regarding an investigation of the earphone monitor and recorder indicator button on the

researcher's tape recorder - initiated by Leiha.

13. a pending trip to the dentist - initiated by the researcher.
14. a comparison of Odia and Leiha's teeth - initiated by Leiha's mother.
15. family relatives, who looks like whose side of the family - initiated by Leiha's mother.
16. who is named after whom - initiated by Leiha.
17. characteristics and behavior of two of her grandchildren - initiated by Leiha's mother.
18. the relative size of Odia and Leiha's rubber boots - initiated by Leiha.
19. painting flowers - initiated by Odia.
20. causes and remedies of blisters - initiated by Odia.
21. getting stuck in the snow and losing one's shoes - initiated by Leiha's mother.
22. an enquiry concerning the relative and total value of a number of coins - initiated by Leiha.

Throughout the conversation there appeared to be a recognition of and a warm responsiveness to Leiha's participation in what Wells (1978) calls "the joint construction of an intersubjective reality" (p. 19). This conversation, recorded in the home, as did others, appeared to exhibit characteristics typical of the "home-talk" documented by Wells (1978) from the Bristol Langauge Study. The topics were wide-ranging, sporadic and spontaneous. They

were characterized by a high incidence of child-initiation (in this case the topics discussed were equally initiated between adults and children) and there appeared to be an underlying reciprocity and cohesion resulting from the attempts of participants to understand and be understood.

While dicussing a recent Spring blizzard, the conversation developed thus:

1. Leiha's Mother: We had a bad storm here Saturday night.
2. Researcher: Oh really!
3. Mother: Blizzard!
4. Leiha: And we had . . . when it was winter . . . we had a big s . . . a big . . . um . . . storm.
5. Researcher: Hum!
6. Mother: You couldn't see the next house.
7. Researcher: M-m-m. Were you alone here?
8. Mother: Yes! Two inches of snow.
9. Leiha: (To researcher while pushing her cuticles back) See you poke this back, K? Do you tell your boys to?
10. Researcher: No, I don't.
11. Leiha: They're going to have hangnails.
12. Mother: They said the roads and the highways . . . you couldn't even see. You know, in the lights, where the lights

shine, you couldn't see further than that.

13. Researcher: M-m-m.

14. Leiha: 'Til you get close.

15. Researcher: (To Leiha) Did they have one (storm) in Sarcee (reserve) too?

16. Leiha: Nope!

17. Mother: They said just a little bit.

18. Leiha: But we can see a little bit. And when we were cold we had to wait outside.

19. Researcher: What was this?

20. Leiha: And then we had to wait outside for a long time.

21. Researcher: When?

22. Leiha: At Calgary.

23. Researcher: Hum.

24. Mother: They had a barbeque Saturday night, I guess that's where she caught a cold.

25. Researcher: Yes, it seems a bit early for barbequing (laughs). It's so cold!

26. Mother: Yes, by the river they said.

27. Leiha: Uh hum, and we were and they were getting water to push the water out of the . . . the fire . . . no, they were putting water in the fire. They

didn't want it to stay up all night.

28. Researcher: M . . . m.

29. Leiha: So it won't burn nothing. You better push the nails (cuticles) back. Mommy, push your nails. (To researcher) Mommy tells me to.

(16, 1, 442-446)

Leiha's contribution to the conversation ranged from the citing of another similar incident (4), a diversionary comment regarding cuticles (9, 11), a logical modification of a preceding statement (14), comparative comments regarding a cold evening at Calgary (18, 20), and, finally, how and why one extinguishes a bonfire (27, 29).

There was throughout an interactive, collaborative negotiating of meaning when Leiha modified her mother's statement regarding her field of vision during the storm (14, 18), when Leiha's mother expanded and clarified Leiha's implicit statement (24) regarding her cold evening outside (18, 20), when Leiha expanded, from her mother's statement regarding the location of the barbeque (26), a description of how they extinguished the fire (27).

This was only one example of negotiating meaning through languaging with others. Together with other recorded observations of Leiha in conversation with other children and adults, it appeared that talk provided a valuable means of not only communicating ideas, but of sorting through, modifying

and relating one's ideas to those of others'.

4.3 Verification of Meaning Through Inferential Questioning

During the course of the study, and more particularly during the analyses of the audio-tapes, it became increasingly apparent that Leiha's questioning strategies often took the form of an inferential or interpretive statement seeking verification.

Sometimes the questions were posed as an interpretive hypothesis, resulting from a logically-reasoned inductive inference, having the intonation of an interrogative statement.

1. After the researcher stated that she wouldn't purchase any swimming goggles, Leiha asked,, "You don't have much money?"

   (11, 1, 245)

2. When observing the small space provided for a battery in a pocket calculator, Leiha questioned, "They're flat batteries?"

   (11, 1, 010)

3. While the researcher was adjusting the f.m. microphone on Leiha's clothing, Leiha enquired, "Does it make you get a stomach-ache?"

   (17, 2, 132)

4. When observing a collapsed tent in the bedroom, Leiha asked, "and did . . . um . . . Mikal come in

and wreck it?"

(39, 2, 1)

5. When the cashier at the cafeteria did not want a piece of gum, Leiha asked, "Cause you're full?"
6. When Leiha was ill with hepatitis and her mother was applying vaseline to Odia's chapped skin, Leiha inferred, "Mommy, I don't need any? For my eyes?"

(16, 2, 303)

Occasionally Leiha's interpretation of an experience came in the form of a direct question.

1. Leiha: Do you eat that stuff (vaseline) Mommy?
   Mother: No.
   Leiha: Well, how come you eat . . . um . . . Vicks?

(16, 2, 305-306)

Often Leiha's interpretations came in the form of a question followed immediately by what Leiha interpreted the answer to be, usually posed again with intonations indicating an hypothesis requiring confirmation.

1. "How come Mikal sleeps for a long time, Darren? He gets . . . um . . . cranky?" (13, 1, 264)
2. "How come he stays up late? Cause he likes to?" (13, 1, 266)
3. "Why do you tell me when I already know? Cause you think I forget?" (19, 1, 180)

Sometimes Leiha's inference or interpretation of a situation would come in the form of a statement followed by the interrogative "right?" Varying in actual meaning with

the specific context and situation, this appeared, to the researcher, to often mean "Isn't this true?" or "Am I not correct?", suggesting that the preceding statement might have a somewhat less tentative status.

1. "Now you have to go get some (water) upstairs, right?" (41, 1, 3)
2. "Ten cents is more than five cents, right?" (27, 1, 156)
3. "It was higher than this one, right?" (35, 1, 170)
4. "Beverly's my sister and Jenny-lou's your mommy, right?" (35, 1, 400)
5. "Those are rocks, hey? But this is a shell, right?" (40, 2, 010)

On a number of occasions, Leiha's enquiry into the meaning of a situation took the form of an extended interaction and a gradual cumulative construction of meaning. Often this involved a continuous process of interpretation, suggestion of possible hypotheses, verification or rejection of these hypotheses and the generation of new interpretations in light of these previous experiences. The following three incidents exemplify this process.

4.3.1 Making Sense While Ironing

One Easter Sunday morning, while the researcher ironed a pair of bluejeans, Leiha patiently waited her turn to attempt ironing a pair of her brother's bluejeans.

1. Leiha: Is that wet?

2. Researcher: Wet what?

3. Leiha: Those (pointing to bluejeans being ironed).

4. Researcher: No, they're dry.

5. Leiha: Dry now? Uh huh. You don't need to do them now, right?

6. Researcher: Oh! I'm not ironing them to dry them. I'm ironing them to get, get the creases out.

7. Leiha: Oh (faintly) . . . cause you don't want to get greasy? (giggles uneasily).

8. Researcher: I don't want them to look creased - you know, have wrinkles in it.

9. Leiha: Oh! This looks wrinkled. Right? This looks wrinkled - cause this is an old one but it's still nice.

10. Researcher: Oh, it looks new to me. These bluejeans are new and they are wrinkled . . . just because I washed them.

11. Leiha: Huh?

12. Researcher: Those are wrinkled just cause I washed them.

13: Leiha: Hum. In our washer? (M-m-m-m). You don't want to pay for a washer?

14. Researcher: (Laughs) No. It's cheaper to wash for nothing at your house than to wash . . . .

15. Mother: (Laughing).

16. Researcher: Those . . . those look brand new to tell you the truth.

17. Leiha: No way! They look old! They're old, not new.

18. Researcher: How do you know they're old?

19. Leiha: Cause. Right mom? These are old. They used to be Wayne's or Vaughan's, right?

(11, 1; 442-465)

Leiha's initial questions (1, 5) indicated that she originally assumed the researcher was ironing in order to dry her clothes. After having been told that the pants were already dry (4), Leiha confirmed this (5) first with the researcher ("Dry now?"), then to herself ("Uh huh") and concluded by voicing the inference, if the pants are dry, the researcher needn't iron them now (5). She voiced her interpretation in the form of a statement and then asked for confirmation "Right?" (5).

Realizing that she misconstrued the reason for ironing, the researcher explained to her (6) that she was ironing not to dry her clothes but to get the "creases" out. Leiha quietly voiced "oh" and the nervous giggle accompanying her next statement (7) indicated that she had not understood the word "creases". From her previous experience, she understood the word "greasy" and from that inferred "Cause you don't wanna' get greasy?" (7). She again stated her inference in the interrogative form. The nervous giggle following

appeared to function as a face-saving mechanism. If her inference was wrong, and her intonation patterns would indicate considerable uncertainty, she could appear to have been joking (7).

When the researcher explained (8) that "creased" meant to "have wrinkles in it" Leiha stated "Oh" with confident intonation, indicated an additional example of something that is wrinkled and extended the meaning to indicate that something is wrinkled because it is old (9).

The researcher interpreted her statement (9) to mean that anything wrinkled was old and stated that the bluejeans were new (relative to her concept of "new") but that they were wrinkled because they had been washed (10). Leiha appeared not to have followed this reasoning (11).

The latter conversation (16-19) seemed to indicate that Leiha's understanding of "old" at that point related more to the temporal history of the object whereas the researcher's use of the word "old" was in reference to aesthetic appearance. What appeared clear, however, was that both were engaged in a dialogue from two individual frames of reference, the success of which depended on the ability of both partners to interpret the other's meaning in relation to her own.

Leiha did not continue with the new/old topic but changed topics by asking another inferential question (13) - had the researcher washed in their washer? When the researcher acknowledged that she had, Leiha extended the inference,

reasoning that the researcher didn't want to pay for a washer. Again her intepretation was stated in the form of a question requiring confirmation. Her inferences appeared based on her own previous experience - that if one did not own one's own washer, one must pay to wash one's clothes at the laundromat. This is quite a complex deduction.

What is important for our particular study is the way in which Leiha actively controlled her negotiations for meaning. She observed the situation, hypothesized possible explanations from her previous experiences, stated these inferences in the form of questions to be confirmed or rejected (1, 5, 7, 9, 13) and, from each confirmation or rejection, began the process again.

If her interpretation was not confirmed, as in 4, she altered her inference, in this case erroneously assuming still that the clothes, since they must have been wet previously, were at least dry "now".

4.3.2 Making Sense of Where's Jason?

While talking to her 18-year-old cousin in the cafeteria, Leiha attempted to discover where another cousin, Jason, was.

1. Leiha: Where's Jason - at home?
2. Bradley: No.
3. Leiha: He went to work?
4. Bradley: He went to Uncle Frank's.
5. Leiha: Oh. He's going to get some money off him?
6. Bradley: Yeah.

7. Leiha: Hm-m.

(27, 1, 250-255)

When Bradley informed Leiha that Jason was neither at home nor at work but at Uncle Frank's, Leiha inferred, again in a question form requiring confirmation, the reason why Jason would have gone to his uncle's.

4.3.3 Making Sense of a Number "Two"

At the cafeteria one morning, Leiha noticed a plastic number 2 on the floor behind a display chart used to advertise the meal special for the day. The researcher stooped over to pick up a plastic letter when Leiha asked:

1. Leiha: What's that?
2. Researcher: Oh, this came off so I'm just. . . .
3. Leiha: There's another number back there . . . two . . . 1982. That's not 1982, right?
4. Researcher: No, it says "May 5".
5. Leiha: (To self) 1982 . . . May second. May second.

(27, 1, 015)

Again Leiha's questioning took the form of a verbalized inference requiring or seeking confirmation. In this case, she appeared to infer that the number two on the floor may have come from the date displayed at the top of the daily menu. When she said "two" she appeared to associate it with the number "two" in the year 1982. However, what was actually

displayed on the board was the month and the day "May 5" and this did not resemble the graphic form "1982". Leiha therefore asked, "That's not 1982, right?" (3). When the researcher told her that the display date, in fact, read "May 5" (4), Leiha paused for a moment, as if in thought, and then said "May second, May second". It appeared as though Leiha was verbally working out for herself where the number two could have belonged in a display of the date that did not include the year - 1982.

Leiha appeared, as well, to be languaging out her thoughts, to be voicing the cardinal variant of two, as in 1982, and its ordinal counterpart, as in May second, in order to substantiate and clarify their distinctness.

In each of the preceding examples and in numerous incidents throughout the study, Leiha appeared frequently to infer meaning in the process of interpreting situations. Talk appeared to be both a means of framing and clarifying these inferences and communicating them to others for confirmation.

4.4 Noting and Describing Detail

Leiha appeared quite aware of detail. One morning while eating an orange at school, she commented, "Oranges are nice and chewy" (7, 2, 391). Another day while describing her Kokom to a friend, she stated:

Leiha: I have a little Kokom. She's that tiny. Look it! (gestures). She's that tiny and she's 100.

Friend: Holy!

(21, 1, 418)

Leiha often noted visual detail in the style and color of particular clothing.

4.4.1 Pantaloon Legs

While the researcher was shortening a pair of pants, Leiha commented on the style and size of the pant leg.

Leiha: Aunty, you need to make that really tiny.

Researcher: What?

Leiha: Those things.

Researcher: These pant legs?

Leiha: (Giggles) Yes - really skinny.

(10, 2)

Leiha appeared to be more observant than the researcher. She was, in fact, referring to a pantaloon-type of trouser, that was currently in style, in which the bottom of the pant leg was brought together and cuffed snuggly around the ankle.

Earlier that morning, when first seeing the same velour outfit, Leiha observed and noted that they looked similar to her jogging suit.

Leiha: Aunty, I have a . . . jogging suit.

Researcher: Does look like it, doesn't it?

(10, 2, 259-260)

4.4.2 Beaded Belt Buckles

One morning, while at the cafeteria, the researcher remarked on the beaded belt buckle worn by the cashier.

1. Researcher: Gee, that's nice. Where did you get it?

2. Lois: My mom made it.
3. Researcher: Oh gee, it's nice.
4. Leiha: And Melton's (Lois' brother), his name is blue right there, right? And. . . .
5. Lois: (Interrupting) And it has his name on it too.
6. Leiha: (Pointing to something on the buckle) And that thing there is a line, right there, right?
7. Lois: Uh huh.

(54, 1, 226)

Leiha appeared to be very aware of the detail on Melton's belt buckle that differentiated it from that of his sister's - the "blue color right there" (4) and "a line right there" (6).

4.4.3 Mommy's Jackets and Moccasins

Another day, while looking in her mother's closet for a jacket the researcher might be able to wear, Leiha stated:

1. Leiha: Here's lots of jackets.
2. Researcher: Maybe this one.
3. Leiha: Yep. That one . . . big . . . too big for her . . . too big for her yet.
4. Researcher: Oh, is it?
5. Leiha: Uh huh.
6. Researcher: Maybe it's too big for me.
7. Leiha: (Gestures) It's this long for her.
8. Researcher: (Trying on the jacket) Oh, it's kind of

big - oh, it's huge!

9. Leiha: It's that long for her.

10. Researcher: It's a little bit big. What else is there?

11. Leiha: There's some nice dresses.

12. Researcher: I don't want to wear a dress.

13. Leiha: (Laughs) What about that coat over there? It's pretty warm.

14. Researcher: Think it would be warm?

15. Leiha: Uh huh.

16. Researcher: Might be too much to wear outside. I'll wear this - the sweater.

17. Leiha: It's warm.

18. Researcher: The sweater is?

19. Leiha: Yes. It's nice and warm for my mom.

20. Researcher: I wish it would be hot outside.

21. Leiha: Then you'll have to wear a short T-shirt. A real hot day? Oops (laughs). Look it. Look it Aunty (jumps on the bed).

22. Researcher: Hmm. Okay, let's go.

23. Leiha: Look at my moccasins.

24. Researcher: Oh, aren't they cute.

25. Leiha: Look at my mommy's moccasins there and there's fur on it too. It matches that fur coat. Even there's rabbit skin on

there and bear's and there's brown.

(17, 1, 008-063)

Leiha stated that the first jacket the researcher considered was "too big for her" mom, adding it was "too big for her yet" (3). From the recording it is not possible to know what she meant by "yet". She then indicated, with a gesture, the specific length of the jacket on her mother (7). After the researcher tried the jacket and, in astonishment, realized how large it actually was, Leiha added that that was how long it was on her mother (9). Leiha suggested another coat, specifying that it was "pretty warm" (13). When the researcher decided to wear a sweater, Leiha indicated that it was warm (17). When questioned further she cited as evidence "It's nice and warm for my mom" (p. 52).

When the researcher wished out loud that the spring weather was warmer (20), Leiha projected "then you'll have to wear a short T-shirt" (21).

When Leiha showed the researcher her mother's moccasins her description became increasingly more specific. It had "fur on it". She stated the kind of fur - rabbit and bear. She indicated where the rabbit fur was. She indicated that the fur matched the fur on her mother's coat and then, as if not to forget any detail, she added, "and there's brown" (25).

Leiha appeared to frequently compare clothing by noting what "matched".

1. Leiha: (Laughing) Look at my dress. Odia has the

same kind but it's a different color.

(6, 1, 460)

4.4.4 Nice Stripes and Snowsuits

One day, while rushing around trying to find a snowsuit for Darren to wear, before he changed his mind and decided to remain inside, Leiha bubbled with talk and activity.

1. Leiha: (Searching for the snowsuit) No, it's right there. It's, it's, it's just over here aunty . . . no that wasn't it. . . . It's upstairs.
2. Which one do you want to wear, the blue one or else the red one? The blue one? What? The blue one?
3. Darren: I'm gonna take the blue one.
4. Leiha: Blue one. You'll have nice stripes on it. Alright? (Runs upstairs).
5. Leiha: (Continuing to search for the blue snowsuit) Think it's not in here. The blue one has better . . . better . . . um.
6. Darren: Stripes.
7. Leiha: Stripes. Now here it is! Look! See! (Holds up the snowsuit). This one has better stripes. They match together, right? They look nice. This is the other lines that are on . . put the legs in first. It's hard.

Leiha's thinking appeared to surface in talk, as she rushed around, searching, finding nothing, thinking of an alternate possibility (1), checking this out, still finding nothing (5), looking in another location until, finally, "Now here it is" (7). She talked to herself as if monitoring the hunt in a rush to see Darren dressed and outside before he again protested the cold as he had done earlier.

Leiha described and compared the visual appearance of the snowsuits. She gradually qualified her description with increased specification. One was blue, the other red. The blue had "nice stripes" (4) . . . "better stripes" (7). She noted their visual co-ordination, "they match" (7), their aesthetic appeal, "They look nice", and finally more detail, "this is the other lines that are on" (7).

4.4.5 Different Drummer

Leiha did not only appear to have an individual sense of visual detail but appeared on at least three occasions to display a discriminating auditory sensitivity.

4.4.5.1 The Owl Call

One evening when Leiha and the researcher were walking to the car, the researcher asked, rhetorically, about the loud croaking of the frogs in the water nearby.

1. Researcher: What's that I hear? Huh? What's that?
2. Leiha: Owl.
3. Researcher: Owl? Really?

4. Leiha: I can hear it.

5. Researcher: I don't think it's an owl. I think it's a . . . frogs.

6. Leiha: Huh?

7. Researcher: I think they are frogs. Listen! (Frogs loudly croaking in the background).

8. Leiha: Not those! Those other things. Owls.

9. Researcher: Oh, really. Maybe I didn't hear the other things.

(35, 2, 158-172)

The tape recorder did not pick up the call of the owl - just the loud chirping of the frogs and the wind howling. Yet Leiha dismissed the researcher's suggestion that the sound was simply that of frogs (5). The intonation in her voice, when she indignantly protested, "Not those!" (8), carried a sense of "How absurd!", an implication that seemed to say that the sound of the frogs was too obvious to have been questioned in the first place, that the researcher must be referring to "Those other things. Owls." (8).

4.4.5.2 The Loon's Call

While out in the yard, watering the lawn, Leiha asked:

1. Leiha: Did you hear something? It went ohh-ooh-ooh.

2. Researcher: What was that?

3. Leiha: I don't know.

4. Researcher: I think that's a loon. (Loon's call in distance).

5. Leiha: Is it?

6. Researcher: (Surprised) I think it's a loon!

7. Leiha: Oh.

(17, 1, 366-370)

Leiha's loon call was pitched high and warbling (1), much like the distant sound we later heard (4). She did not know the bird's name but she heard the call through the sound of the watering, when the researcher had not.

4.4.5.3 Watch How the Sound Goes

On the same afternoon, while watering the lawn, Leiha pulled the hose over to a large metal lid and let the water run down around the cover and through the air holes. Leiha instructed the researcher, "Watch, watch how the sound goes" (17, 1, 332). The researcher listened. For the first time she could hear the water running down into the tank beneath, with a hollow, echoing sound.

In summary then, Leiha appeared to note and describe aspects of both visual and auditory detail. Moreover, the focus of her attention was idiosyncratic, and not necessarily apparent to the researcher.

4.5 Comparing

Leiha was frequently observed comparing. Furthermore, particular terminology often carried an implied recognition and understanding of the opposite or converse meaning of the

word. Often, when Leiha stated what something was, her language carried the further implication of what was not.

1. When wanting something out of the cooler at the cafeteria, Leiha stated, "Get it . . . you're higher." (48, 1, 030)
2. While walking toward the researcher's car, Leiha observed humorously, "Our truck is longer than your skinny car." (48, 1, 109)
3. While playing cards, Leiha asked, "Where's that other card like this . . . that ugly Joker?" (7, 2, 495)
4. "Odia was just walking. She wasn't running." (8, 2, 432)
5. "Yours is white, mine is pink." (2, 1, 230)
6. "That matches." (2, 2, 069)
7. "I have the same as you. That's the same." (1, 2, 428)
8. "We have an orange and those two have an apple." (1, 2, 428)

While building an igloo with her cousins, Mikal (aged 10) and Darren (aged 7), comparison of aspects of the construction was often observed. Leiha's measurement of the igloo tended to be stated in relative and concrete terms. Through gesture and language, she was at once comparing and illustrating.

While describing the igloo she had made, Leiha,

indicating a specific point on the living room wall, stated, "Mommy, you know what? I made a real long igloo. It's right, mo . . . aunty? It was this size - down to the floor and up to here. Right aunty?" (6, 1, 324)

In a similar situation earlier in the study, when relating the size of a snowdrift to the researcher, Leiha recreated the drift in language and gesture and indicated its height in relationship to the height of a painting hanging on the living room wall. Later, when showing the hole that she had dug, Leiha stated, "Aunty, look it how big I have it (the hole) now. Look, I'll step into it. Look aunty, look! It's right up to my legs." (6, 1, 159)

Leiha not only compared the hole she was digging in relation to her own height but also in relation to Mikal's considerably larger size. She stated "Mikal, right? I done it deep, right? But it's not deep for Mikal, right Mikal, Mikal? Ab . . . about now you . . . you can fit in that, right?" (6, 1, 174) Leiha qualified "deep", initially in relationship to herself and then to Mikal. She appeared to have made the finer distinction as a lead-up to a later attempt to persuade Mikal to continue digging the hole.

4.6 Citing Alternatives

In the process of building the igloo, the citing of alternative possibilities was also observed.

While establishing the best possible worksite, at least three locations were considered by the three children. There

was a snowdrift to the south of the house, but it was rejected as being too shallow. The children decided to build the igloo at the back of the house, on the east side, where there existed a long drift about five feet in depth. After having made this decision, it became, in Leiha's mind, important not to dig the hole too close to the edge of the drift where one might have difficulty maintaining one's balance or where one would be more likely to slide down while digging.

1. Darren: (Shouts from a distance) I'm going to start right here - up to there, Leiha.
2. Leiha: What?
3. Darren: We're going to start right here.
4. Leiha: No, here.
5. Darren: (Muffled by Leiha's shovelling).
6. Leiha: Alright . . . h . . . how come?
7. Darren: Do it down.
8. Leiha: Down?
9. Darren: Yeah.
10. Leiha: Yeah, but we will slide.
11. Darren: Huh?
12. Leiha: We'll slide down.

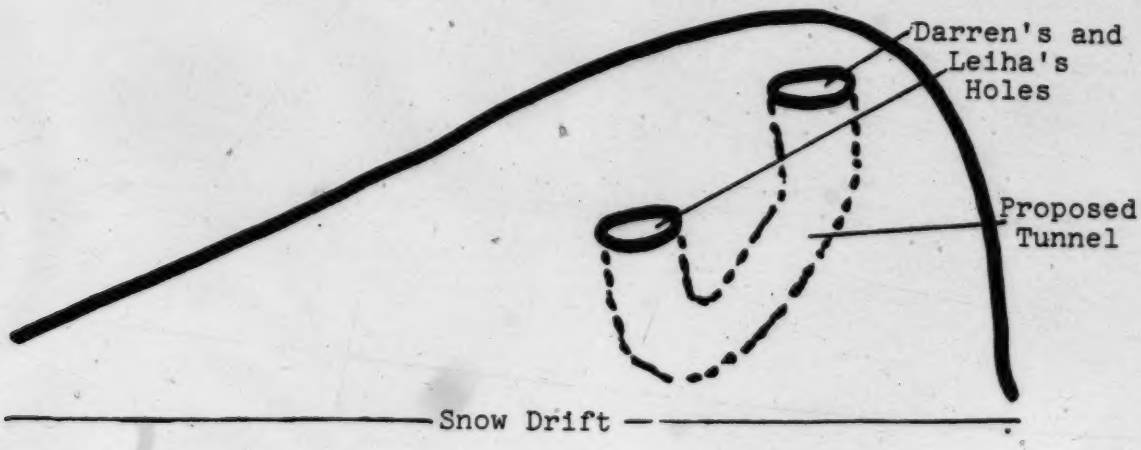
(5, 2, 308-315)

Darren had decided on a location close to the summit of the drift, where it was the deepest, so that he could dig down deep (7). Leiha agreed to digging down (10) but wanted

the hole dug further along the crest of the drift, and slightly away from the edge, where she was standing (10). Leiha won.

When Darren moved his initial digging site, Leiha again suggested another slight alteration. Aware that Darren's second proposed worksite lay directly over the septic tank cover, Leiha suggested, "Darren, how about not that one, cause that one's . . . cause, look! Keep that hole right there! (Gestures) We won't make it over there. (Gestures) We might strike gold. (5, 2, 442)

"Striking gold" in this case was a peer-group joke referring to digging and discovering a sewage system. When Darren later declared that he was going to dig his hole down and have it turn, into a tunnel, under the snow, Leiha proposed another alternative whereby their two separate holes would turn under the snow and join each other forming an underground tunnel system.



1. Darren: I'm going to try to make mine go that way. Look! Leiha! I'm going to make mine go down and then. . . .
2. Leiha: (Interrupting) Yes, but mine is going to go with yours.
3. Darren: (Muffled).
4. Leiha: No, cause ours will be longer.

(5, 2, 446-451)

Leiha had, in fact, altered Darren's original plan, although it was not clear from the tape which direction Darren had originally intended his tunnel to take (1). Leiha proposed the interconnecting tunnel because, as she reasoned, "it will be longer" (4). The alternative plan was adopted.

Still another example of Leiha suggesting alternative possibilities occurred another day when Leiha and Darren prepared to go outside and continue work on their igloo tunnel system.

1. Leiha: Which one you want to do (use), the shovel?
2. Darren: Yeah.
3. Leiha: Right. Which side you going to do, your's or mine?
4. Darren: Mine.
5. Leiha: Alright.
6. Darren: Cause mine is . . . evenly deep.
7. Leiha: Deep as mine?
8. Darren: Uh-huh.

(6, 1, 494-498)

Leiha in this example appeared to be looking at alternative digging instruments (1), alternative worksites (3) and varying depths of the two holes (6, 7).

As Leiha continued digging and the hole became deeper,

Leiha: Can't dig anymore cause too far up (laughs). Like you said, maybe should have done that little one.

(To self) Yes, but Mikal couldn't fit, Darren couldn't fit but me and Odia.

(6, 1, 105-114)

Leiha appeared to be re-evaluating her earlier decision to dig the two holes and connecting tunnel system in the deeper as opposed to the shallower snowdrift. Her evaluation appeared to have resulted from the difficulty she was experiencing shovelling the snow out of the hole as it became increasingly deeper. As she weighed the alternatives, her talk appeared to become more egocentric, more, as Vygotsky states, for herself. She appeared to come to realize, as she talked out the alternatives, that, had they chosen the smaller snowdrift for the construction site, neither Mikal nor Darren could have "fit".

When Leiha dug deeper and found it increasingly more difficult to lift shovels full of snow up and out of the hole, she sought alternative solutions to the problem. She attempted to persuade Darren and then Mikal into continuing the job.

When Mikal suggested how he might dig the igloo tunnel system, Leiha suggested, gesturing, "Yes or else you can make it round. You can go like that, right? Or else Mikal, you can go like that or else go straight! (6, 1, 146)

Leiha suggested at least three alternatives to Mikal's proposal for a connecting tunnel system. Talking aided her in clarifying, examining, weighting and communicating possibilities. Leiha's linguistic resources, however, appear strained. She appeared to be working through a visual representation, a mental plan with insufficient vocabulary. The immediacy of the situation and the on-site location allowed for a mixture of talk and gesture.

4.7 Projecting and Explaining Cause and Effect

Leiha was found to frequently appendage a cause or a reason to a statement. The following were four instances of such:

1. While showing the researcher the "lilies" in the flower bed at the front of the house, Leiha explained why some plants had already begun growing and why one plant appeared smaller than the others.

   1. Leiha: They were planted in the winter. They were planted in the winter. That's how come they're growed big already. But that one - it was - look this one's the small one. Daisy (the dog) keeps on

chewing it.

(17, 1, 285-290)

2. Leiha: Odia has fat feet cause she always wears two socks.

(17, 1, 090)

3. Odia: I should cut this T-shirt aunty, cause it's too long.

Leiha: Mommy will get mad.

(17, 1, 097)

4. "Odia, let me wear this (shoes) cause you're wearing those . . . um . . . rubber boots."

(17, 1, 151)

Some of Leiha's statements regarding alternate possibilities, comparisons and cause and effect were at once projections of these into the future. For example:

1. Leiha stated, "And, and after we do that tomorrow we'll do the rest and, if we don't finish it tomorrow, the other day." (6, 1, 442) Leiha's statement has a sense of alterhate possibilities through time - "now", "tomorrow", "the other day".
2. When Leiha suggested that they run over to the bushes, about two kilometers from the house, on the other side of the field, Darren expressed concern that they might get lost. Leiha stated, "We won't! Cause we'll follow our tracks back. We don't (assuringly) we don't get lost. We don't get lost." (10, 2, 069)

3. When Odia and Darren jokingly talked about taking their chocolate Easter bunnies to the swimming pool, to "teach it how to swim" and to "dunk him", Leiha laughed and stated, "He'll melt." (10, 2, 338)

4. While explaining what would happen if one squirted the water hose at the power pole, Leiha stated, "Well, if you squirt this at - see it almost electrocuted . . . then it will redick to me and you." (17, 1, 321) From the transcription it is not clear what Leiha meant by "redick". Whether it is a misconstruing of a word she previously heard or a creation of her own to represent an electrical current striking Leiha and the researcher is unclear.

5. When Leiha could no longer shovel and attempted to elicit Mikal's help in digging her snow hole deeper,

1. Leiha: Right. Mi . . . Darren, Mikal, right?
2. I done (dug) it deep, right?
3. But it's not deep for Mikal. Right Mikal? Mikal, right?
4. Ab . . . about now you, you can fit in that (hole), right?
5. So, make it down to the grass, so all of us can stand, right, Mikal? So we can stand. Right?

(6, 1, 174-183)

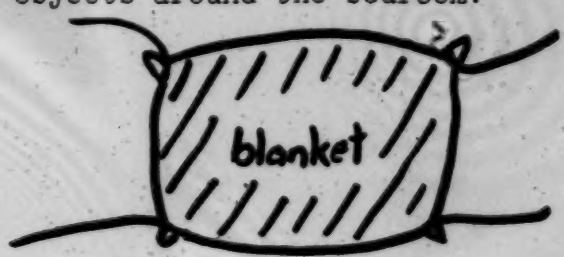
In her excitement to persuade Mikal to stay outside and help with the tunnel, Leiha employed a number of strategies. She talked quickly, filling every space with talk, holding Mikal's attention, not allowing any interruptions until she had finished. She utilized an initiating strategy, "Right . . . Mikal, right?" that ensured a confirming response and permission to continue (see Section 4.3).
She reasoned how she had already dug it deep (2) but how it was still not deep enough for Mikal (3), she suggested that "about now" Mikal could fit into the hole (4) and finally much more directly stated that he should dig the hole down to the grass so "All of us can stand" (5).

4.8 Sequencing

On a number of occasions, as Leiha played or planned, she appeared to order her activity. The following are two examples of such sequencing.

4.8.1 Tent Making

One Saturday, Leiha suggested to Darren that they make a tent. Darren had rejected the idea, stating that he had no tape with which to secure the blanket onto the wall or bedpost. After a few moments, Leiha suggested that they tie string around the corners of the blanket and then tie them to various objects around the bedroom.



Leiha: Whyn't you get some of that string there and get the blanket and tie that blanket to the string and then tie the string around here and everywhere?

(40, 1, p. 7)

In describing her proposal, Leiha sequences the action in a logical order.

4.8.2 On the Roof of the Well

One afternoon, while sitting on the roof of the well with Odia, Leiha spontaneously began a word game involving the order in which we dress ourselves.

1. Odia: Aunty, give me my shoes and my socks.
2. Leiha: Uh uh. I'll get them.
3. Just hold my pop here and I'll get you your socks, and your pop.
4. (In amusement) No! I mean your socks and your shoes.
5. That's it - your socks and then your shoes and then your pants.
6. No! First your pants, then your socks, then your . . . um . . . shoes, then your shirt. Right?
7. First your pants, then your socks, then your . . . um . . . shirt and then your shoes. Right?
8. Else your shirt and then your pants and then

your socks and then your shoes.

9. Or else - your socks, your shoes, your pop, your boons, your bones, your head, your body.

10. Odia: Connected to the neckbone.

(35, 1, 470-485)

In the process of suggesting that one might first put on one's socks, then one's shoes and finally one's pants (5), Leiha realized that this would be unlikely, illogical or simply cumbersome. She then proposed three other varied but equally valid sequential arrangements for dressing (6, 7, 8), always ensuring that one's pants and socks were put on prior to one's shoes. Then, in what appeared to be a culturally characteristic attempt to lighten the mood, Leiha inserted a humorous sequence of the absurd (8) to be topped by Odia's dry but apt "connected to the neckbone" (10).

4.9 The Languaging of Enquiry and Experimentation

On a number of occasions during the study, Leiha initiated or became involved in an enquiry or problem-solving activity. Four examples of such instances are submitted here. There were, however, many other instances, for example, while

1. building the tunnelling system in the snow,
2. hunting Easter eggs,
3. finding and attaching several lengths of hose that at once did not leak and still were long enough to

reach around the house and across the yard to water the strawberries,

4. devising a method of climbing to the roof of the well with a spade and lowering oneself down with a rope,
5. building a raft with three logs, a large piece of cardboard and a rope.

4.9.1 Experimenting with the Indicator Light

It was while visiting Leiha at her home one morning, when she was ill with hepatitis, that Leiha appeared first to notice that the recording light on the researcher's tape recorder lit up when she spoke through the f.m. microphone clipped to her blouse.

Leiha: How come it's deetin' whenever I talk?

Researcher: It shows it's working.

(16, 2, 118)

From time to time, for the next twenty minutes, Leiha observed the indicator light "deet" as she sang, shouted and whispered during the visit. Appearing to realize that the recording light lit up whenever or however she spoke, Leiha than manipulated the variables and asked Odia to talk. Nothing happened. Odia spoke again. Still the indicator light did not "deet". Leiha then spoke clearly, carefully, all the while watching the indicator light. It lit up immediately, blinking red as she spoke. She then blew into the microphone. The indicator light again blinked on. Leiha

appeared somewhat puzzled. Earlier she had heard her own, Odia's, her mother's and the researcher's voices on the ear phone monitor attached to the tape recorder. Now, however, only her voice appeared to influence the blinking of the recording light.

Leiha: Odia talked on this. Then she (the researcher) talked. How come . . . how come it. . .?

Odia: (Whispering to Leiha) What should I say?

Leiha: But it's not deetin. . . . Only if I talk, Odia. Look. Only if I talk. See! See if it. . . . Only if I talk then it will deet. Cause I have this microphone on. You want it on?

Odia: Okay.

Leiha: Put it on you. There now. (Putting microphone on Odia laughing) And then you will light on it.

(16, 2, 489-499)

Leiha, through a careful monitoring and analysis of the data, had conducted an informal scientific enquiry. She observed the recording light "deet" when she spoke. She varied the tone and volume of her voice and observed the light continue to blink. She varied the source of the talk. The indicator did not register. She checked the indicator to ascertain if it still blinked when she spoke again. It did. She formulated her conclusion. "Only if I talk, then it will deet." She added an accompanying explanation. "Cause I have the microphone on." The enquiry concluded with Leiha

transferring the microphone to Odia - an invitation to replicate.

4.9.2 Experimenting with the Bookcase

One morning, when Leiha's seven-year-old cousin Darren began jumping in the livingroom, Leiha warned him that the bookcase was going to fall if he continued jumping. When Darren suggested that he might then go downstairs or upstairs to "tear around", the researcher indicated that this was not an acceptable idea. At this point Darren enquired, in a serious tone, "Will that still fall down?" This began a series of questions and activities that examined whether the bookcase would continue to shake if one jumped in different locations, each one somewhat more distant from the bookcase itself.

1.	Leiha:	That's going to fall down cause that . . . that's light?
2.	Darren:	(Amusingly while continuing to jump) Alright, then I'll tear around downstairs - or upstairs.
3.	Researcher:	(Quiet warning intonation) Darren!
4.	Darren:	(Seriously) Will that still fall down?
5.	Leiha:	Yes
6.	Darren:	Let's see if it will shake. I'll go to your bedroom (leaves and goes upstairs).
7.	Leiha:	(Giggles).
8.	Odia:	(Whispering) What if it shakes?

9. Leiha: But it won't, right?

10. Darren: (Re-enters the room) Was it shaking?

11. Leiha: Yes.

12. Darren: I'll try downstairs in Wayne's room (leaves and runs downstairs).

13. Odia: (Astonished) It was shaking!

14. Darren: (Re-enters) Was it still shaking?

15. Leiha: Uh huh.

16. Darren: Outside it won't.

17. Leiha: I know.

18. Darren: Well, if we put it outside, it will (laughs).

19. Even if we go to Chicago it will.

20. Leiha: (Laughs).

21. Darren: Even if we go to Vancouver Island (sings gruffly) Poopy island!

(10, 2, 364-391)

Leiha explained why the bookcase might fall (1). Darren, in a manipulation of the variables, logically explained what conditions would ensure that the bookcase would shake even if one were outside (18). As the mood changed (19-21), becoming whimsical and silly, Darren's projections of testing sites continue to form a logical progression away from that living room, the house and that yard - to "Chicago" (19) and finally, off the mainland, to "Vancouver Island" (21).

4.9.3 Experimenting While Juice Making

During the study Leiha often made small snacks for

herself and others - toast and sandwiches, for example. She was allowed considerable freedom in the kitchen to open various containers, to mix ingredients, to help herself to whatever there might be if she were hungry. She usually did not and was instructed by her mother not to "put the burners on high". She did, however, make grilled cheese sandwiches. She also took turns with her sister Odia washing and wiping dishes and setting the table.

One afternoon while making a grape drink from powdered crystals, Leiha and Darren became involved in two enquiries. One involved the gradual flavoring of the water, the periodic tasting and stirring until, finally, the grape flavor was acceptable to both Leiha and Darren.

The second experiment involved the comparison of who could stir the faster. After hearing Leiha say that Darren stirred too slowly (7), Darren tried to increase his stirring speed. Four comparisons were made (7, 10, 16, 17). Leiha cited proof twice (11, 17) that her stirring was faster.

1. Leiha: (Stirring) Get some more juice. I'm gonna taste it. Pour it all in. You stir.
2. Darren: (Stirring) Taste good?
3. Leiha: Okay. Give that spoon. Get that spoon there.
4. Darren: I want a taste.
5. Leiha: Tastes good, okay?

6. Darren: Tastes like water (continues stirring).

7. Leiha: Here, I'll stir it, cause you're too slow. Here, bring it, bring it. This is how (stirs faster). Okay now Darren? (Darren tastes) Okay? Is it watery? Still watery? Still watery, Darren?

8. Darren: I'm gonna try (i.e. stirring) even faster.

9. Leiha: Okay, there's some more grape over there Darren, more grape.

10. Darren: (Stirring) This faster?

11. Leiha: Nope. I'm the fastest one cause it makes a bigger hole. What you need is more . . . um . . . grape (opens package) Raisin. There.

12. Researcher: What are you guys making?

13. Leiha: Juice.

14. Researcher: You must be full of juice by now.

15. Leiha: No.

16. Darren: (Stirring) That's as big of a hole I made.

17. Leiha: Want to see how much I make? Just watch, Darren. Just watch this (stirs hectically).

18. Darren: You make a lot! Holy!

19. Leiha: Okay, taste it Darren (puffing). Okay? Is it watery? Is it still watery? It's still watery?

(Interruption)

20. Darren: I wanna taste (tastes the drink). Tastes alright.

21. Leiha: Yes. Get some . . . um . . . juice. Get those cups there. Get those fancy cups, member?

22. Darren: Oh, yeah.

(14, 2, 014-114)

The fact that a comparison of one's stirring speed could be made by comparing the relative sizes of the holes created by the centrifugal displacement of liquid was both interesting and, to the researcher, amazing. It appeared to suggest not only a fine perceptual discrimination but also an inductive reasoning strategy from the concrete observation (a varying-sized hole in a stirred liquid) to a more abstract generalization (a larger hole equals a greater speed).

Unlike the experiment with the bookcase which Darren initiated and carried along, in this enquiry Leiha appeared definitely in charge. She initiated the juice making. She directed the action.

What was also interesting was the collaborative nature of this and the preceding enquiry. Leiha asked Darren at least eight times for his opinion on the taste of the juice and

they did take turns stirring and adding more grape crystals. In the preceding activity Darren required the assistance of Leiha and Odia and they, in turn, appeared to take an interest and enjoy their involvement as observers of the shaking bookcase.

All three experiments appeared to result from the children's natural curiosity. They not only pursued a question in a logical manner but appeared to infuse the activity with interest and joyfulness.

4.9.4 Enquiry Concerning Ear Wax

One afternoon, after having a shower, the researcher and Leiha lay down for a nap (It appeared later that the researcher was more tired than the subject).

While lying in bed, Leiha began peering in the reseacher's ears and enquiring.

1. Leiha: Dig in your ears. You have . . . they're dirty. They're wet.
2. Researcher: Hmm.
3. Leiha: Do you have . . . do you have wet wax or dry wax?
4. Researcher: How do you know? Can you see it?
5. Leiha: Uh huh. Do you have wet?
6. Researcher: Wet, from washing my hair.
7. Leiha: Is it dry or wet?
8. Researcher: Where?
9. Leiha: Your um . . . (giggles).
10. Researcher: What? What are you talking about?

11. Leiha: (Giggling).

12. Researcher: Tell me what you're talking about? Dry or wet what? Dry or wet. . . .

13. Leiha: You have dry . . . um . . . wax - or wet?

14. Researcher: I think your wax is, at first it's w - it's soft and moist or wet and then later when it gets old I think it dries up. It gets . . . dry.

15. Leiha: Mine is wet.

16. Researcher: Can you feel it?

17. Leiha: (Giggling) Yeah.

18. Researcher: What does it feel like?

19. Leiha: (Giggling) Sticky and wet.

20. Researcher: Did you notice any in my ears?

21. Leiha: I didn't see any in your's (kissing researcher).

22. Researcher: Maybe I don't have any.

23. Leiha: Maybe it dry - uh - went away by the water. That's how it goes. Then some more comes by your brains (giggling).

24. Researcher: That's it?

25. Leiha: I don't know.

(29, 1, 046-088)

The enquiry in this particular episode was somewhat circumscribed by the researcher's initial embarrassment in

pursuing the topic. The researcher never did, in fact, answer Leiha's question regarding whether the researcher had dry or wet wax in her ears. The researcher successfully circumvented the personal nature of the enquiry by asking questions (4, 8), by seeking repeated clarification (10, 12) and by framing her eventual explanation in the third person (14).

Leiha was persistent in her enquiry. She initiated the question four times (3, 5, 7, 13) before the researcher finally attempted to address the issue. She was quite specific in her observations - that the researcher's ears were "dirty and wet" (1) and that her own ears were "sticky and wet" (19). Her final explanation, that the researcher's ear wax may have dried up and been washed away (23), seemed somewhat contradictory to her initial observation (1). Given the researcher's indirect attempts to deny that her ears were "dirty and wet" with wax and her later explanation concerning dry and wet wax (14) however, Leiha's proposed explanation appears both logical and socially expedient.

As Leiha conducted or particiapted in an enquiry, talk appeared to help her clarify and order ideas and form conclusions. As she negotiated meaning with another person, the resultant languaging appeared to aid them both in a progressive collaborative construction of meaning.

4.10 Planning and Organizing Through Language

While engaged in an Easter egg hunt, Leiha exhibited

many planning and organizing strategies, as she had while constructing the igloo tunneling system (Section 4.6).

As she searched for eggs, she occasionally talked to herself, planning (2, 4, 5) the hunt and verifying (1) or dismissing (3, 4, 5) possible sites where she might find hidden eggs).

1. "Here's one." (13, 2, 006)
2. "I'm gonna check up here.: (13, 2, 075)
3. "Can't find one there - in my Easter basket." (13, 2, 277)
4. "I'm gonna check in here. No." (13, 2, 200)
5. "Maybe there's one behind this thing. Nope." (13, 2, 360)

She organized the search and controlled much of the activity.

1. "I'm gonna check in the cupboards. You (Darren) check in those cupboards over there." (13, 2, 255)
2. "Let's go Darren. Don't just stand around there like a dummy. 'Member you're not a dummy." (13, 2, 334-337)
3. "'Kay, Darren. Let's take all these eggs down, see if we can count - here's one Darren!" (13, 2, 360-361)
4. "Let's go and get that ladder upstairs and see if we can step on it." (13, 2, 374-376)
5. "Come on Darren. We're gonna look all - in all the

high places, cause there's lots and lots of them too, right Darren?" (13, 2, 381-382)

While hunting Easter eggs, it was Leiha who found the most. Each time she found one, she would yell out. Odia had previously told Leiha, and Darren concurred, that Leiha needn't yell out so loud when she found an egg, but could say so in a quieter tone:

1. Odia: You guys just don't have to say "Here's one." All you guys have to do is grab it.
2. Darren: That's what I'm going to do.
3. Leiha: (loudly) Here's one!
4. Darren: (Objecting to Leiha's manner) You don't have to. . . .
5. Odia: Don't say that Leiha. Or else, or else . . . . Do it the way Darren's doing it, the way he's s . . . saying it (demonstrates in a quiet tone of voice) "Here, here's one". He's not saying that.

(13, 2, 113-125)

Odia, in this excerpt, exhibited considerable social acuman. Appearing to sense the aggravating potential of Leiha's continued boastful announcement "Here's one!", Odia suggests two alternatives - "Grab it" and say nothing (1) or say "Here's one" quietly (5). She demonstrates the latter. Leiha, in contrast, did not appear to want to subdue the enthusiasm of the hunt.

After Leiha completed a search of the floor area and most of the furnishings at ground level in the living room and dining room, she began combing behind books and ornaments on a tall book shelf in the livingroom.

1. Darren: The Easter bunny can't put any in there (ceramic container).
2. Leiha: Sure, cause he must have carried it down. He could have.
3. Darren: Put that back up.
4. Leiha: Wait. I'm finding some.
5. Odia: Leiha, before you even up. . . .
6. Leiha: Here's one! I found one by the camera.

(13, 2, 227-232)

Darren dismissed the possibility that the Easter bunny could have put an egg in a covered pottery container placed on the top book shelf (1). Leiha, herself struggling to reach the container, disagreed (2). It appeared, from her perspective, that the Easter bunny would have first brought the container down to hide the egg inside, as she was doing, and then replaced it on the shelf. She suggested and supported this possibility - "Sure cause he must of carried it down" and then, to leave the statement open in a tentative stance, added "He could of."

As Leiha searched, she planned a trick to outwit Odia by appearing to have found more eggs than she actually had. She quietly, and in whispers, included Darren in her plan.

1. Leiha: I found one. Here's one.
2. Darren: You don't have to say it out 1. . . .
3. Leiha: (Whispering) Darren.
4. Darren: What?
5. Leiha: (Whispering) Say to Odia, "I found one" and then take one out and then hold it. (Out loud) I found one again! (Whispering) But not the same color all the time, alright?
6. Darren: (Clears his throat) I found one again!
7. Leiha: I have one!

(13, 2, 295-304)

Leiha's plan showed considerable creativity, both in the planning and the execution, right down to the alternating of the egg color.

As she stretched to reach an egg hidden high, she reasoned that the Easter bunny must have been tall. "It was hard looking up there. My legs almost cracked. He's too tall!" (13, 2, 365)

Once having scolded Darren for not "looking good", Leiha appeared to lighten the effect by promising "I'll let you have one or two of them." She phrased her promise in such a way that Darren may not at first have realized that the promise was contingent upon her finding more - "If I find any." (13, 2, 364)

Leiha, during this activity, was not necessarily the person with the idea but she acted upon the idea. When she

mentioned her legs were "cracking" from having stretched to look in high places, Darren suggested "a stool". However, it was Leiha who later went to get the ladder. When Odia mentioned her chocolate bunny was left outside beside the ditch, it was Leiha who initiated action to go and get it.

Leiha used her language to plan and organize collaborative action. She also used language to plan, focus and organize her actions when she was alone.

4.11 Language for Oneself
- Egocentric Speech

Occasionally, while talking to someone else, Leiha would hear an error in what she had said and immediately self-correct.

1. While describing how she and others extinguished a campfire, Leiha confused details of the description. Upon hearing her mistake, Leiha immediately corrected her account.

   "Uh huh, and we were and they were getting water to push the water out of the fire - no, they were putting putting water in the fire. They didn't want it to stay up all night."

   (16, 1, 460-463)

2. While showing the researcher photographs in the school yearbook, Leiha confused the ordering of a friend's name. She corrected herself again, upon hearing the mix-up.

"Look, Terry Bear. Look it. Here's Terry Bear but his real name is Bear . . . um . . . not "Bear" - Terry. His name is Terry."

(40, 2, 8)

Through languaging out her thoughts, Leiha was able to hear them, to listen to them and recognize mistakes or errors in wording. Although essentially examples of social speech, the self-correction apparent in these two examples, and a number of episodes previously cited in the study (Section 4.6, page 87; Section 4.8.2, p. 92) appear to indicate that while talking to others, Leiha's language occasionally assumed a self-instructive function characteristic of what Vygotsky calls "egocentric speech". Barnes (1976), Martin (1971) and Berry (1982) found similar examples of social talk functioning as a tool for individual thought construction.

Vygotsky (1978) studied the dynamic relationship between speech and action. He stated that speech initially accompanied and reflected action and later preceded action functioning as an aid to a plan "conceived but not yet realized in behavior" (p. 28). Calling this type of speech "egocentric", Vygotsky (1962) stated:

> The function of egocentric speech is similar to that of inner speech. It does not merely accompany the child's activity; it serves mental orientation, conscious understanding; it helps overcome difficulties; it is speech for oneself, intimately and usefully connected with the child's thinking (p. 133).

While alone, Leiha's talk to herself served some of these

functions. In some instances, Leiha's egocentric talk helped her focus on the task at hand. In other instances, it served to substantiate or reify her thoughts in auditory form, thereby facilitating the recognition and reworking of inconsistencies. The following are four examples of such instances.

4.11.1 Egocentric Speech While Making Sense of Phonetic Rules

One day, while sawing blocks of snow in her back yard, Leiha began repeating and reworking, to herself, phonetics rules heard in school.

> Leiha: Kettle starts with king - K. Kettle starts with - K. King starts with K. Then . . . S starts with sun. Snake starts with sun (faltering intonation) I mean S (laughs) and . . . S starts with um . . . Santa, I mean. Snake - Odia, did you get Darren?
>
> (61, 1, 058-072)

After having stated "Kettle starts with king", Leiha hesitated for a moment and then corrected herself. After substituting "K" for "king", Leiha repeated the original statement twice, each time substituting k in the corrected format. Leiha appeared to become tangled in her own language as she tackled the initial S consonant variant requiring the same format, "A starts with S". She began with a reversed statement, "S starts with sun". She substituted correctly a referent word in place of the S and stated "Snake starts

with sun", her voice faltering as she completed the sentence. She self-corrected, "I mean - S" and then appeared to attempt unsuccessfully to repeat the S statement in the corrected order.

The disjointed nature of the talk appeared to follow what Vygotsky (1962) would call the ebbing and flowing of one's thoughts as they travel from speech externalized to speech internalized. He stated that "children facing difficult situations resort now to egocentric speech now to silent reflection" (p. 10). He further stated that "when egocentric speech disappears from view it does not simply atrophy but goes 'underground'" (p. 18).

4.11.2 Egocentric Speech While Looking for Terry Bear

Leiha appeared to talk to herself to focus her attention on the task at hand as well as to order and work through an understanding.

While searching through the school yearbook, Leiha kept repeating to herself the name of the person she was looking for as if to remind herself and keep her mind focused on the task at hand.

Leiha: Okay. Here's Lenny and where's Terry Bear (to self), Terry Bear (whispering and looking), Terry Bear didn't take - Terry Bear didn't take his picture.

(40, 2, p. 6)

4.11.3 Egocentric Speech While Printing

On another occasion, while printing her name, Leiha

quietly repeated the letters to herself as she drew each character.

Leiha: (To self) L - e - Le - i and then h - a.

This appeared to help her direct and focus her attention on the activity. After she completed printing the "L" and the "e", she repeated these two letters to herself "l,e" as if checking to see where she was and thereby what she must print next.

4.11.4 Egocentric Speech While Making Sense of a Song

One morning in the cafeteria prior to going to kindergarten, Leiha began singing a song to herself that she had been observed singing a number of times before.

Previous to this morning, she had hummed the tune and sung the lyrics with little apparent attention. Often she had sung, "There are five nickles in a penny. There are five nickles in a penny."

On this morning, however, she found a nickle and some pennies in her mother's purse. For some time, she was engaged looking at the bird imprinted on a Canadian centennial penny that was among those she had found.

Leiha: (Excited) Look! a birdy! a birdy!

Researcher: Oh yes! It's a bird on that um . . . one cent. I wonder. . . .

Leiha: Mommy, a birdy!

Researcher: (To self) I wonder what kind of bird it is?

Leiha: It's an American one.

Researcher: No, it's a Canadian . . . it's a Canadian one cent but it's a centennial penny.

Leiha: M-m-m.

(45, 1, 324-329)

:

Leiha: Mom, look it. I know how to count one cent, two cent, three cent, four cent.

(45, 1, 336-338)

In the process of enquiring about the centennial coin and counting the pennies, Leiha mislaid the nickle. While looking for it, she appeared to come to realize that the nickle, unlike the penny, had no bird imprinted on it.

Leiha: (Loudly) Oh, I miss my five cent! Where is it? With my birdy! Oh! There it is, with my birdy. No, that (the penny) just has a birdy. here's the birdy (i.e. penny).

(45, 1, 339-344)

The enquiry regarding the bird on the centennial penny, the counting of the pennies and the search for the mislaid nickle appeared to focus Leiha's attention on the distinctiveness of each coin.

This time, when she began to sing the song to herself, she appeared to hesitate mid-way and deliberately correct herself.

Leiha: (Singing to self) Five - five pennies in a nickle. There's five nickles in a penny.

There is five nickles in a penny. There's five - no - five pennies in a nickle. (To the researcher) Is this a nickle? Is this a nickle?

Researcher: Yes, it is.

Leiha: (Confidently announces) This is pennies.

Leiha: (Humming the song to herself) There's five nickles in a penny, right? No! Five pennies in a nickle, right aunty?

Researcher: Um hum.

(45, 1, 344-360)

Her attention focused on pennies and nickles from the preceding activities, Leiha appeared, for the first time, to listen to the words she sang, to sing them, to listen to them, and in the process to clarify and relate the ideas of cents, five cents, pennies and nickles in their relative relationship. This example appeared to illustrate what Bruner (1962) described as "the internalization of external dialogue that brings the powerful tool of language to bear on the stream of thought" (p. viii).

In summary then, it appeared that Leiha frequently used talk to herself, here referred to by Vygotsky's term "egocentric speech". Through egocentric speech, Leiha was able to focus attention, and concentrate on the task-at-hand and to clarify and correct the meaning of ideas expressed here in formalized rules and musical lyrics.

4.12 Playing with Language

On a number of occasions, Leiha was observed playing with language. She not only played with the sound and rhythm of words but appeared to deliberately twist and manipulate meaning to create a humorous effect. This seemed to reflect both the characteristic word play of young children and the subtle and humorous word play characteristic of her Plains Cree cultural background.

4.12.1 Playing with Sound and Texture

Sometimes, Leiha would appear to combine and repeat words or sounds, not for any apparent meaning, but simply to enjoy the rhythmic and tonic sense of the word. Vygotsky talks about such word play as a means by which a child first becomes acquainted with the external structure of the word, a way of enjoying its intrinsic substance soon to be overshadowed by its symbolic meaning and function. Vygotsky (1962) states:

> Even in a child of school age, the functional use of a new sign is preceded by a period of mastering the external structures of the signs. Correspondingly, only in the process of operating with words first conceived as properties of objects does the child discover and consolidate their function as signs (p. 50).

Chukovsky (1963) seems to stress more the delight and the enjoyment that comes with playing with words. He talks about, "The inexhaustible need of every child of every era and of every nation to introduce nonsense into his small but ordered world" (p. 96).

1. On one occasion Leiha seemed to enjoy the sound of "lilies" as she wrapped her tongue around the "l"

sounds and repeated the word over and over while watering the flowers. (17, 1, 281)

2. Later that same day, while running around the yard, she chanted in rhythm:

Ding a ding a dong dong,
Ding a ding a dong,
Ding a ding a dong dong,
Ding a ding a dong.

(17, 1, 190)

3. Similarly one morning, while coloring a mimeographed rhyming sheet having a boat, coat and goat on it, a child at Leiha's table began chanting:

You do Billy goat, Billy goat.
You do Billy goat, Billy goat.

(1, 2, 001)

Moments later, while printing numbers on the same rhyming paper, Leiha was rhythmically saying: "Tapa doka, tapa doka, tapa doka" (1, 2, 023)

4. On another morning, when asked to run and get the Vaseline, Leiha began singing:

"Baby Vaseline. Baby Vaseline. Baby Vaseline. Baby Vaseline"

(16, 2, 312)

as she ran to get the jar.

5. Perhaps on Easter Sunday Leiha exemplified more what Vygotsky meant by "mastering the external structure of the sign". When the researcher asked Darren and Leiha to go out to the car and bring in a parcel from "the trunk", Leiha appeared unfamiliar with the

word (her mother has driven a truck for a number of years). As she ran out to the car, she kept repeating "the trunk, the trunk, the trunk" (10, 2, 234)

6. On various occasions Leiha appeared to play with both the sound and the meaning of the word, calling:
   1. Kerby - "Herby". (16, 2, 159)
   2. Clifford - "Chippard". (27, 1, 180)
   3. Eugene - "New gene" and "Newjeen". (27, 1)
   4. Green - "Gleen". (10, 2)
   5. Lois - "Louis". (45, 1)
   6. Juice - "Juish" and "Bruce". (14, 2, 149)
   7. Mona - "Kamona". (27, 2)
   8. Billy Goat - "Belly Goat". (1, 1, 456)
   9. Hog it - "hug it".

4.12.2 Playing with Word Meaning

Leiha did not only play with the sound, rhythm and texture of the words and ideas but also with their meanings. She punned, teased and joked in what often appeared to be a deliberate attempt to create what Britton (1970) calls "misfit improvisations". Chukovsky (1963) also talks about the child's play with ideas, his eagerness to make words his toys. He credits such word play with a significant role in the meaning-making when he states that, "For every 'wrong' the child realizes what is 'right' and every departure from the normal strengthens his conception of the normal" (p. 102).

There appeared to be a cultural, as well as a child-related aspect to what Philip's (1975) would call Leiha's "teasing, punning and putting people on". Although the researcher did not study this phenomenon in depth, it was apparent that a very rich aspect of Leiha's language repertoire was a form of culturally-derived, community-cultivated linguistic play. Hymes (1979) refers to this when he speaks about "the capacity of Indian people for creative wit (that) has been obscured by the image of Indian as silent stoic" (p. ix). Basso (1979) discusses the traditional Western Apache analogy that likens the development of solidarity in interpersonal relationships to the slow and careful stretching and tanning of deer hide. He states that, "Joking is one means of stretching social relationships, a playful device for testing and affirming solidarity" (p. 69). Although referring to the Western Apache rather than the Plains Cree and to adults rather than children, much of Leiha's joking behavior occurred in a social context and appeared to reaffirm her membership in the group. It also reaffirmed her understanding of the congruent as opposed to the absurd, the acceptable as opposed to the ridiculous.

1. One afternoon, while playing on the well, Leiha began to tease Odia by parodizing a line from their Pinnochio record. Substituting "Odia" for "donkey" in the original, Leiha said, in a deep voice, "Then it hit me. These are bad boys who changed into Odias." (35, 1, 462)

2. In attempting to coax a hesitant Odia to jump off the well roof, Leiha urged, "Slide down, jump down. You won't kill yourself if you're brave and honest and poopy." (35, 1, 160)
3. In referring to any contact with the septic tank or its cover, Leiha and her two cousins began calling this "striking gold". (5, 2, 291)
4. One morning in the cafeteria, Leiha sang a song making fun of a lady worker, in a good-natured, humorous interaction. Leiha sang, "I've a Betty; She's a big baby. Betty, she's a big baby. Betty, she's a big baby." (45, 1, 403)
5. On the same morning, while looking through her mother's purse, at the cafeteria, Leiha's mother commented:

   Mother: I'm broke.

   Leiha: You're broken?

   Mother: Yeah, I'm broke.

   Leiha: We're broken. We're all broken (higher intonation). We're all broken! Oh no! Oh! Oh no! (Crying tones) Oh! Oh!

   (45, 1, 3)
6. Another morning when leaving the cafeteria, Leiha turned and said good-bye to Lois, the cashier, in this way:

   Leiha: House! House! Good-bye House!

Lois: Good-bye, ah baloney brains.

Leiha: You baloney brains. You salomi brains.

Lois: You're salomi brains.

(50, 1, 446)

7. At school Leiha one day referred to John, a fellow student, as "John Boy" and, later, "Long John".

8. While eating breakfast one Sunday morning, Mikal asked Leiha for some milk.

Mikal: Do you have any more milk?

Leiha: Yeah, in the fridge. Why? Do you need it for your baby (laughs) (41, 1, 1)

9. When suggesting that her mother might babysit the researcher's sons while she was home ill, Leiha, in a dry, subtle form of humor, poked fun at her mother's potential babysitting behavior:

Leiha: Mommy will watch the boys. She will sleep. They will watch her.

(45, 2, 108)

10. While constructing a paper pig one day, Joey peered over John's work and asked, with surprise and astonishment, "What's that?" John replied, in a typically low, drawn-out intonation, "My ass." Joey, sputtering with shock and surprise, yelled "Teacher! John sweared."

"Kachisk", Cree for "your ass", is a standard joke form used by some members of the community. It is used with

an hilarious effect. When juxtaposed in response to a preceding remark having a serious intent, it can create a ludicrous result. The researcher herself has, in the past, unintentionally "set herself up" as it were, to be the amusing target of the form. Example: Researcher: "That's huge!" Response: "Kachisk?" Researcher: "Oh, that smells!" Response" "Kachisk?" John, in this case, appeared familiar with the standard joke form. He used it appropriately. In contrast, the subsequent gasp and sputterings of surprise issuing from Joey would appear to indicate that he was either unfamiliar with the mode or was shocked to hear it used in the classroom.

Philips (1975) talks about the requisite socio-linguistic and semantic understandings that are necessary for people to engage in effective joking behavior.

> Putting people on requires not only a general awareness of the aspects of the communicative process that can be made use of in this way, but also specific knowledge of the cultural organization of symbolic symbols of the people who are party to the put-on (p. 17).

Leiha appeared, then, to play with language in a number of ways. Such talk seemed to function as a method of familiarizing her with both the external structure and the meanings of a word. "Joking, punning and putting people on", in addition, appeared to be encouraged by and grow out of a rich culturally-derived joking behavior having considerable potential for making and extending meaning.

4.13 The Nature of Language Differences

Although this study focused upon what Leiha could do with her language as opposed to what she appeared not to do, three aspects of her language behavior that appeared somewhat specific to her developmental level and her experimental and cultural background are noted and discussed briefly.

4.13.1 Developmental Differences - Pseudo-Concepts

Leiha appeared to use a number of words to complete meaning of which she did not always know. Vygotsky calls these fragmentary word meanings "pseudo-concepts". He further stated that "pseudo-concepts predominate over all other complexes in the preschool child's thinking" (p. 67). Vygotsky discusses the development of word-meanings from early childhood until adolescence. He believes that full word meaning and concept development are not possible until after puberty. He further believes that a word functions first as a means or referent for a gradually evolving word meaning toward concept development. Talk facilitates this development. Vygotsky states: "Words take over the function of concepts and may serve as means of communication long before they reach the level of concepts characteristic of fully developed thought" (p. 55).

What follows are four examples of Leiha's talk which suggested incomplete or pseudo-concept formations typical of her developmental level.

1. When discussing clothes, bought at the second-hand

store, it appeared that Lieha had a different orientation to the word "junk" than her mother's usage implied.

Mother: Clothes. She always comes home with a whole bunch of junk (laughs).

Leiha: Not - not - not candy.

(16, 1, 415)

2. When the researcher referred to her son as "solid", Leiha appeared to have a somewhat different referent for the word.

Researcher: He's solid and husky.

Leiha: He's wood.

(16, 1, 398)

3. When discussing "money", Leiha seemed to have a specific understanding for the word, relating particularly to paper currency.

Leiha: They're lucky. But I don't get no money.

Mother: Oh, what's this? (pointing to coins Leiha has been counting).

Leiha: Only that. . . .

Mother: Well. . . .

Leiha: Only change I get. . . . Only for my birthday I get dollars.

(16, 2, 463-466)

4. When discussing relatives, in this instance "relations", Leiha appeared not to have the same

meaning as the researcher.

Researcher: Rochie's your relation?

Leiha: No, she's my cousin.

(1, 2, 020)

4.13.2 Cultural Differences - Accent and Dialect Shift

Leiha's language appeared, in many ways, to be very similar to that of other five-year-old children in south central Alberta. Although her language often exhibited the accent and intonation patterns characteristic of many members of her community, aspects of her accent and dialect did vary in accordance with the situation. She would, for example, say "dis" or "dat" in some instances and "this" and "that" in others. She would say "gonna" and "yeah" in one instance and "going to" and "yes" in another. She appeared to have a range of registers that varied. While the nature and circumstance of this variation was not analyzed in this study, it did appear to support Stubb's (1976) assertion that "the child uses different varieties of language in different social situations" (p. 32).

There were occasions in the study when Leiha appeared to make a distinct dialect shift, when her talk would assume the lilting, rhythmic patterns characteristic of many Cree-speaking people in the community.

On one occasion, while recounting a trip to the second-hand store with "Kokom", Leiha made a striking shift in pace and rhythm of delivery as she talked about a pair of ripped

gloves.

Leiha: Look at what they did it,
When we bought them they were rip-ped.

(16, 1, 408)

Part of the meaning of the episode for Leiha appeared to be carried in or reflected by this sudden, distinct and strong shift in intonation pattern.

On another occasion, when showing the researcher a dead mouse under the front steps of her house, Leiha made a similar, very distinct shift in intonation pattern.

1. Leiha: A mouse down there (pointing under the front steps).
2. Researcher: Oh good. Ooo! Oh! It's dead! Is it?
3. Leiha: Yes. Yuck! It's bleeding, right? There's red on his nose.
4. Researcher: Ooo.
5. Leiha: Mommy killed him . . . with a mouse trap.
She trowed him down there
so no one not get scared him.
But you and me are scared him.

(17, 1, 294-303)

As Leiha began speaking (5), her voice sounded suddenly fearful and again, as in the previous example, she began to speak with a definite rhythmic intonation distinct from her language immediately before and after this particular chunk.

Although the researcher did not study accent-shift

thoroughly enough to be able to elaborate on the nature of its occurrence, it did appear to reflect an aspect of meaning-making for Leiha that was incomprehensible to the researcher. It also appeared to illustrate a very distinct range in language register. Basso (1979) discusses the meaning of code-switching. Although Leiha did not appear to consciously or deliberately alter pitch, tempo and voice quality, such distinct code-switching appeared to be a form of meta-communication having personal and social meanings.

4.13.3 Vocabulary Differences

One problem Leiha experienced in the process of talking and making meaning appeared often to be one of a lexical or experiential nature.

She might not know or remember, for example, a particular vocabulary term but have had numerous experiences in relation to the item. In such a case she might have to use an indirect, more detailed and often more extensive and creative range of language to compensate when communicating for the lack of the specific terminology.

4.13.3.1 The Pitchfork Episode

The fact that she might not know the specific word for, for example, "pitchfork" did not prevent her, having had previous experiences with a pitchfork, from utilizing and communicating a meaningful understanding of this tool.

While in the process of shovelling snow to build an igloo, Leiha suggested to Darren that he go and get the

pitchfork to use in the activity.

Leiha: Go and get the shaker - for grass, member?
That one's good too, like the shovel.
(5, 2, 489-491)

In order to compensate for not having the specific vocabulary item, Leiha appeared to do a number of things spontaneously and naturally. At first, she created her own terminology relating to the usual method of using a pitchfork ("shaker"). She then referred to what the pitchfork was formerly used for ("grass, 'member?"). This might also imply the previous context in which Leiha and Darren used the pitchfork. They had used the pitchfork during the summer to pitch grass into a pile after mowing. Finally, she evaluated the pitchfork ("That one's good, too"), concluding with a metaphorical comparison of its functional value in relation to the shovel.

4.13.3.2 The Septic Tank Episode

On another occasion, while taking the researcher on a tour of her home and the yard, she happened upon the round, heavy metal cover of the septic tank lying amongst the grass in the back yard. The researcher did not know what the object was and asked Leiha. In the subsequent explanation, Leiha appeared to be quite familiar with the uses, operation and emptying of the sewage disposal system. However, she did not appear to have the specific terminology for the septic tank, the lid and the large hose and motor for sucking out the

contents of the tank during the emptying process. It was only several months later when a sanitation truck came to Leiha's home to empty the septic tank, that the researcher actually understood more clearly what Leiha described on this day.

1. Researcher: What's that? (septic tank).
2. Leiha: For poop, 'member? Everything - kleenex and stuff - how they clean the thing. Ours was cleaned last year. You open that thing up with ah . . . with . . . um . . . a large . . . um . . . large . . . um . . . what is it . . . large . . . shovel. It's real high - up to that thing.
3. Researcher: Then what did you do?
4. Leiha: And then you, then that big fat thing . . . you know . . . um . . . and then you pick it up . . . pick this thing up (points to lid) and then . . . and then . . . then you pick that up (hose) and then . . . and then you have to . . . um . . . put that thing on that turner and then it goes. All the poop and kleenex and pee comes up.
5. Researcher: Where does it go to?
6. Leiha: Inside that big truck. And then they

have to dump it at the . . . a . . .
dump.

(17, 1, 334-352)

Leiha's hesitating and fragmented language appeared to mirror the effort, the working through, the clarification and ordering of her ideas in order to communicate to the researcher, a detailed and sequential description of the use and emptying of the septic tank. In attempting to remember the name of the shovel that first hoisted the cover off the tank, it appeared as though Leiha's thinking had surfaced. It appeared that, at that moment, she was not talking to the researcher as much as she was talking to herself - "with . . . um . . . a large . . . um . . . large . . . um . . . what is it . . . large. . . ." (2)

Beneath the lack of specific vocabulary and the expressive language of a working mind, Leiha's talk functioned to facilitate, actuate and communicate considerable mental processing and meaning-making. She specified the contents of the tank and when it was last cleaned. She described sequentially how the tank was opened, how a large hose was put into the tank, how the engine ("turner") sucked up the contents and, finally, where the truck dumped its contents. She described, through gesture and comparison with another concrete object, the height of the shovel that lifted off the tank cover ("real high - up to that thing") and she described the suction hose ("big, fat"). Leiha appeared to have quite a

clear and detailed understanding of the function and process of cleaning septic tanks. What she appeared to require was more precise vocabulary with which to label her experiences.

4.13.3.3 The Toy Dish Episode

One morning, when Leiha was home ill with hepatitis, the following conversation transpired. While the researcher was in the kitchen, washing dishes and Leiha was standing on a chair nearby, drying the dishes, the researcher enquired about the identity of a miniature toy juice pitcher and lid.

1. Leiha: (Laughing and talking with rhythmic intonation) Watch for the lid for the little pot.
2. Researcher: For the little which?
3. Leiha: The little thing. That's how I did it. 'kay, put it on here now Aunty.
4. Researcher: Oh! What is this?
5. Leiha: This one. Looks like that one (i.e. lid for pitcher). Aunty, we put juice in there and then we push it down and then we put it in a tumbler cup. You want to see them all? (i.e. toy dishes). I'll get them all, alright? I'll show them all, okay? 'kay, here's one. . . .
6. Mother: No, you're not going . . . not . . . you're not. . . .

(interruption - fixing tape recorder)

7. Leiha: See! Here they are aunty.

8. Researcher: Oh! That was what. . . .
(interruption)

9. Leiha: Look!

10. Researcher: Oh! Are those ever nice!

11. Leiha: Ha! They're littler, littler . . . l . . . but I don't know where the other cups are. (To self) They're somewhere here. No. They must be.

12. Mother: They're downstairs, Leiha.

13. Leiha: They're downstairs?

14. Mother: Yeah.

(16, 1, 339-367)

This excerpt began when Leiha requested that, while washing dishes, the researcher watch for the lid for her miniature juice pitcher. The researcher did not, at first, understand what Leiha was referring to because she had not used and appeared not to have the vocabulary term denoting a pitcher. Instead, Leiha referred to it as "the little pot" (1), "the little thing" (3), "this one" (5) and "they" (7). What is interesting here is not the lack of a specific vocabulary term but the way in which Leiha actively proceeded to help the researcher understand what she meant without using the precise term. She compared the toy lid to its full-sized equivalent (5). She explained, in a sequenced explanation, where and when it was employed in the process

of making, storing and pouring (5). She showed other examples of the same group of toy dishes (7). Finally, she described their graduated sizes, again not using the specific suffixes denoting the superlative but implying the relationship in gesture and word "littler, littler, l . . . l. . . ." (11)

4.14 Summary of Out-of-School Languaging

In the preceding analysis, the nature and extent of Leiha's language strategies for meaning-making in a variety of out-of-school contexts were described. Although only a few instances can be reported, Leiha appeared generally to be a very active and energetic child. During the study, if she were not preoccupied elsewhere, she usually participated confidently when discussions developed with visitors or members of the household. She was observed frequently interpreting and inferring meaning from her experiences. She continually sought verification of her inferences through a variety of questioning modes. In the course of her daily activities she was observed comparing, noting and describing detail, sequencing, explaining cause and effect, suggesting alternatives and projecting into the future. She used language to enquire, to hypothesize, to manipulate variables, observe consequences and reformulate hypotheses in the light of additional information. She used language to plan and organize herself and others. She appeared to clarify her

understandings in both talk with others and talk to herself while alone. She appeared to inject many of her activities and language with enthusiasm and joyfulness. She played with both the texture and meaning of words and sounds.

On the whole, Leiha appeared to be continually and actively making meaning through talk with others and to herself. Often, through talk, she appeared to control the focus of her attention, the direction of her enquiry and interpretation and clarification of her experiences.

4.15 Introduction to Talk in School

4.15.1 The Distribution and Nature of Leiha's Language Within the School Program

The analysis of Leiha's in-school language is divided into three main sections:

1. Leiha's language in the teacher-to-whole-class-interaction situation,
2. Leiha's language in small groups while competing seatwork assignments, eating lunch or waiting during the transitional periods between activities,
3. Leiha's language to self - Vygotsky's "egocentric speech".

It was found that the organization and nature of Leiha's kindergarten classroom, although limited in the nature and extent of daily activities, was sufficiently open to allow for extensive small group talk. This would be in direct contrast to the Dillon and Searle (1981) study that found

little student talk within a highly structured, teacher-controlled Grade 1 classroom.

Analyses of Leiha's talk within the teacher-to-whole-class lesson situation indicated Leiha to be a highly active participant in an interactional situation, usually requiring monosyllabic and often random responses to teacher-initiated questioning.

Analyses of Leiha's contribution to small group talk indicated considerable [redacted]-going inquiry initiated by Leiha and several other students. Permeating the meaning-making appeared to be a genuine sense of interest and often enthusiasm for the question-at-hand and, frequently, a light-hearted wisp of humor that appeared to be characteristic of both the children's youth, personality and culture.

Leiha appeared, finally, to use what Vygotsky describes as talk-for-oneself or egocentric talk considerably as a tool for focusing on tasks, for substantiating and externalizing her thinking and working through, clarifying and reshaping new ideas.

4.15.2 The Observed School Program

Leiha was observed in the kindergarten 14 mornings from early April until late May. With the exception of one morning, when Leiha accompanied another kindergarten class on a field trip to the Boston Pizza, the daily school programme remained essentially the same.

Leiha was late for school 11 of the 14 mornings observed.

The degree of lateness ranged from approximately 5 to 45 minutes, averaging about 11 minutes per day. Discussions with the teacher indicated that Leiha was often late. Leiha travelled to school each morning from the cafeteria where her mother worked. Leiha's mother indicated that often, when the cafeteria was busy or when she was short of staff, it was quite difficult to leave work at a precise time to drive Leiha and her sister to school.

During the observation period, the classroom attendance ranged from 14 to 8 children, averaging 11 students per day (with the exception of the day of the field trip).

The kindergarten morning usually began with a teacher-to-whole class opening exercise. On five mornings, the class had begun their daily seatwork assignment when Leiha arrived. On two mornings the opening exercises were in progress when Leiha arrived and on the remaining six mornings, the opening exercises did not commence until after Leiha's arrival.

During the opening exercises, the teacher would sometimes take the attendance, discuss with the children what day it was, and review the letters of the alphabet or the numbers on the calendar that had been previously introduced. During this time, the daily seatwork activity was introduced, demonstrated and often a completed model exhibited for the class to observe. On the first observation mornings, when the teacher-aide was in charge of the class, there was an additional short rhyming lesson, an opportunity for the children to tell their news to the class, and a right hand shaking exercise.

Table 1

Time Distribution During Classroom Observation
(in minutes)

Category	Leiha Late	Free Time Book Reading	Opening Exercises	Story Time	Seat Work	Snack Time	Recess	Free Play	Bingo or Music	Transi-tion	Dismissal Time
Day 1, Apr. 5	-	-	10	20	25	10	20	15	-	35	11:15
Day 2, Apr. 6	10	-	5+	10	30	10	20	30	-	30	11:25
Day 3, May 4	20	-	-	20	25	15	20	25	-	15	11:20
Day 4, May 5	15	-	-	15	15	15	-	50	-	15	11:05
Day 5, May 6	?	-	?	-	25	10	-	10	-	25	?
Day 6, May 13	30	-	-	-	20	10	45	15	-	25	11:25
Day 7, May 14	45	-	-	-	25	5	30	15	15 m.	10	11:25
Day 8, May 17	----------	----------	Field Trip to Boston Pizza								
Day 9, May 19	10	10	5	-	45	10	-	40	20 m.	5	11:25
Day 10, May 20	5	10	5	-	30	15	45	25	-	10	11:25
Day 11, May 21	10	-	10+	-	30	15	50	-	-	25	11:20
Day 12, May 25	5	20	5	-	15	20	30	25	15 b.	15	11:25
Day 13, May 26	5	10	10	-	35	5	30	30	5 b.	20	11:30
Day 14, May 27	-	-	10	-	30	15	25	25	5 b.	35	11:25
Total Approximate Recorded Time	165	50	60	65	325	145	315	295	35 m. 25 b.	240	

Usually the seatwork activity followed the opening exercise. This consisted of the following activities:

Day 1 - Coloring a mimeographed rhyming sheet. Tracing one small flower for a get-well card.

Day 2 - Weaving one Easter basket. Coloring, cutting and pasting a second Easter basket.

Day 3 - Tracing, cutting and pasting flowers for a Mother's Day card.

Day 4 - Coloring a T-consonant mimeograph sheet.

Day 5 - Weaving a background mat. Tracing, cutting and pasting fruit onto the mat. Coloring mimeographed Nursery Rhyme sheets.

Day 6 - Coloring mimeographed short-A vowel sheets.

Day 7 - Coloring and cutting an apple puppet.

Day 8 - Weaving a mat to be stapled into a "lantern".

Day 9 - Tracing and cutting a turtle and gluing onto a background.

Day 10 - Tracing and cutting a bird and birdhouse and gluing onto a background.

Day 11 - Tracing, cutting and pasting a fish onto a background.

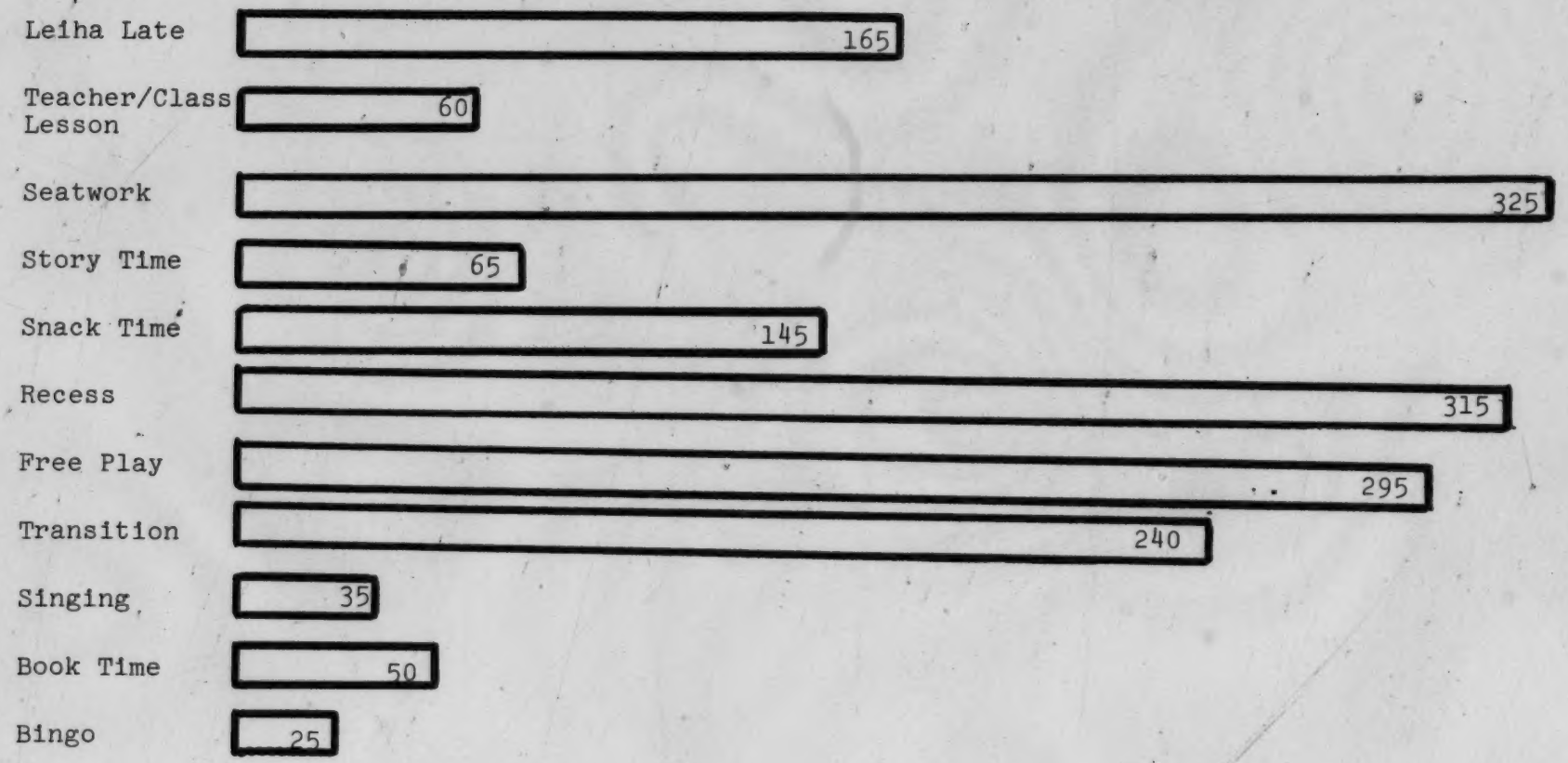
Day 12 - Coloring a short-U vowel mimeographed sheet. Tracing, cutting and pasting a frog onto a background. Printing one's name five times.

Day 13 - Tracing, cutting and pasting a pig onto a background.

Table 3

Bar Graph of Time Distribution During
Class Observation

(to the nearest 5 minutes)



It appeared that the seatwork activities were often duplicated in the other classrooms. Similar examples of trace, cut and paste lambs, butterflies, chicks, flowers, etc. were found displayed throughout the kindergarten.

Snack time usually followed the seatwork activity after which the children went outside for recess. Recess was usually followed by a free play period. During this time the children were delegated by the teacher to either remain in their own classrooms, to go to another classroom, or to play in the open area. In all three locations, the children were generally allowed to play with whatever toys were available. These ranged from a playhouse and carpentry table to various blocks and puzzles.

The opening exercises, seatwork, lunch, recess and free play periods formed the basis of the kindergarten program observed. As well, on the first four observational days, the children listened to five recorded stories, Disneyland records, published by Golden Press.

1. Snow White
2. Goldilocks
3. Mickey and the Beanstalk
4. Three Little Pigs
5. Saggy, Baggy Elephant

and two teacher-read stories:

1. Put Me in the Zoo
2. An Easter Story.

During the nine remaining in-school observational periods, there was no observed reading or playing of stories to the children in Leiha's classroom.

On two mornings during the observation period, the entire kindergarten met after free play for a 15 and 20 minute sing-song and on 3 occasions Leiha's teacher had a 15 and 5 minute letter or color bingo game.

A comparative distribution of classroom time observed is represented in Table 2.

It was found that during the seatwork activity, lunch and the transitional periods between activities, the children engaged in considerable interactive talk. The teacher, during these periods, appeared usually to be engaged in various disciplinary, administrative and procedural matters. During this time there was often very little teacher-to-child talk that was not related to these matters.

During recess and free play, the activity level of the children and Leiha in particular, appeared to reduce the amount and nature of the verbal exchanges among pupils.

At recess, Leiha was continually on the run, usually at the head of a group of children that went from swings to monkey bars, to teeter-totters, to slide, to merry-go-round and back and forth between these, sqealing gleefully.

Although Leiha exhibited a similar level of activity during indoor freeplay, verbal interchange and physical movement was more subdued.

4.16 Leiha's Talk During Teacher-to-Whole-Class Interactional Situations

The observation of Leiha's in-school languaging behavior was characterized by little specific, deliberately-structured, teacher-to-child interaction. During the study, there was never any observed teacher-to-small-group organized activity, other than when the teacher sat at a table with a group of children to aid them in the cutting, pasting, weaving or stapling of seatwork assignments. During this time most observed teacher-to-child languaging centered around the administrative, disciplinary and technical aspects of the task-at-hand. The approximately 25 minutes of bingo, 60 minutes of story time and 35 minutes of music observed tended to be characterized by very unidirectional languaging, dominated by the teacher or the recording, as was the case during most of the observed story time.

Leiha's teacher was observed in deliberately structured interaction with the children on only eight other occasions for a total of about 60 minutes, approximately 3.48% of the observed school time. This time was spent in what we have called the "opening exercises".

One example of such an opening exercise is presented here. It was chosen by the researcher as one of the clearest and most exemplary of the teacher-to-whole class lesson formats observed during the study.

On this particular morning, Leiha arrived at 9:10. The

six children in attendance were laying on the floor, looking at library books. The teacher was cutting strips of paper in preparation for a mat-weaving activity. Approximately 12 minutes later, the children were told to put their books away and turn towards the front of the class.

The teacher began thus:

1. Teacher: Does anyone remember what month?
2. Leiha: (Shouts out) Monday!
3. Teacher: Uh uh.
4. Child: Tuesday?
5. Teacher: Month . . . ?
6. Leiha: The month. . . .
7. Teacher: The month of. . .?
8. Child: Monday!
9. Leiha: Monday!
10. Teacher: Uh uh.
11. Child: January!
12. Leiha: January!
13. Teacher: Somebody said it over there? What was it?
14. Child: (In background) May?
15. Teacher: Good. Your turn now. Deanna, tell them again?
16. Deanna: May!
17. Teacher: We're on the month of . . . ?
18. Leiha & Other Children: May!

19. Teacher: May. And the number is . . . ?

20. Children: Nineteen.

21. Teacher & Leiha: Nineteen.

22. Teacher: (Points to the numbers on the calendar) I want everyone to count.

23. Leiha: One.

24. Teacher: (Taps a girl who is talking to Nigel, on the head with a meter stick) Nigel! I'm going to lock you up over there if you don't sit still.

25. Teacher & Children: (Count) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19.

26. Teacher: Tomorrow will be. . . ?

27. Leiha: Twenty!

28. Children: Twenty!

29. Teacher: Twenty. And today is. . .?

30. Leiha: Mon. . . .

31. Teacher: (Leading) Sunday, Monday. . . .

32. Teacher & Leiha: (Joins) Tuesday. . .?

33. Leiha: Wednesday.

34. Children: Wednesday.

35. Teacher: Wednesday. Tomorrow will be. . . ?

36. Child: Wednesday.

37. Teacher: Today's Wednesday. Tomorrow wi. . . .

38: Child: (Interrupts) Saturday!

39. Leiha: Sat. . . .

40. Teacher: No, Saturday's. . . .

41. Leiha: Friday.

42. Child: Sunday.

43. Leiha: Friday.

44. Child: Monday.

45. Leiha: Tuesday.

46. Child: Friday.

47. Teacher: (Pointing to calendar) This is Tuesday.

48. Leiha & Another Child: Monday.

49. Teacher: Wednesday. . . ?

50. Leiha: Friday.

51. Teacher: Thurs. . . .

52. Teacher & Leiha: . . . day.

53. Teacher: Friday, Satur. . . .

54. Teacher & Leiha: . . . day.

55. Teacher: And Sunday we stay home.

56. Child: (In background) Friday we. . . .

57. Teacher: (Yawns and picks up weaving mats and paper strips) Okay, we're going to put them like this.

58. Leiha: Again?

59. Teacher: This time it's a little lantern. We're going to staple tog . . . staple it

together.

60. Child: (In background) Quit!

61. Leiha: We're not gonna take it home?

62. Teacher: We're gonna take them home.

63. Leiha: What're they gonna be - hats?

64. Teacher: No, lanterns.

65. Child: (In background) I've got one at home.

66. Child: (In background) Me too.

67. Teacher: Jolayne, will you be quiet?

68. Child: (Watching teacher weave the mat) Like that?

69. Teacher: (Weaving) Uh huh.

(10 seconds)

70. Leiha: Are they so hard?

71. Teacher: (Weaving) Mmmm.

72. Child: You done another one?

73. Teacher: (Weaving) This one.

(19 seconds)

74. And these.

(19 seconds)

75. (Quietly, almost to self) And then you take it and hang it up.

76. Child: Do we take them home?

77. Teacher: Uh huh.

78. Child: Do we have to hang them up?

79. Teacher: (In a quiet voice, almost to self) But

I think tape might work better here first and then staple them up.

80. Child: We're going to take them home tomorrow?

81. Teacher: (In a louder voice) Yes, but first we're gonna do our. . . . (walks over to chalkboard).

82. Child: Our numbers.

83. Teacher: No, letters.

84. Children: Letters.

85. Teacher: What's this one? (prints an "M" on the board).

86. Leiha & Children: M.

87. Teacher: M (prints s).

88. Leiha: S.

89. Children: S.

90. Teacher: (Prints K).

91. Leiha: K.

92. Children: K.

93. Teacher: (Prints H).

94. Child: S (incorrect).

95. Leiha & Children: F (incorrect).

96. Teacher & Leiha: H.

97. Teacher: (Prints T).

98. Leiha: T.

99. Children: T.

100. Teacher: (Prints a G).

101. Leiha: G.

102. Children: G.

103. Teacher: Good (prints O).

104. Leiha: O.

105. Children: O.

106. Teacher: (Prints R).

107. Leiha: R.

108. Children: R.

109. Teacher: (Prints L).

110. Child: L.

111. Leiha, Children & Teacher: L.

112. Teacher: Good (prints F).

113. Leiha: R.

114. Child: R.

115. Child: T, T.

116. Teacher: F. Somebody said it. F. (to self) Okay, what else did we do. Oh.

117. Child: (Guesses before teacher prints) W!

118. Teacher: This one.

119. Child: (Guesses before teacher prints) P!

120. Leiha: (Guesses before teacher prints) P!

121. Teacher: (Prints W).

122. Child: W.

123. Leiha & Children: W.

124. Teacher: W and we did - this one last week (prints P).

125. Child: P.

126. Leiha & Children: P.

127. Teacher: P and . . . .

128. Child: Those, too (pointing).

129. Teacher: Oh - this one (prints A) last week.

130. Leiha: A.

131. Teacher & Children: A.

132. Leiha: You forgot V. You forgot V.

133. Teacher: (To self) Oh yes, the V.

134. Child: And that one up there.

135. Teacher: The next one will be. . . .

136. Child: (Guesses before teacher prints) L.

137. Teacher: This one (prints a U) Does anyone know that one?

138. Leiha: U.

139. Teacher & Children: U.

140. Teacher: That's our next one. Okay (moves away from chalkboard).

141. Child: Oh! Won't you make that one? (points).

142. Leiha: Uh huh.

143. Teacher: Yeah. I made that one. Okay, go and sit down with your . . . I'll come around helping you. Here. Everyone has ten of

them (strips for weaving).

(45, 2, 360-45, 2, 436)

The purpose of this lesson, like most of the other opening exercises observed, was to establish the date, to review numbers, to recognize the letters of the alphabet and to introduce and demonstrate the seatwork (i.e. weaving) activity.

The extent and nature of languaging during this episode and Leiha's role therein appeared very similar to the seven other instances of teacher-to-whole class interactions that were recorded.

In all instances, teacher language appeared to dominate. At first the teacher tended to control questioning by initiation and delegation. The typical initiation-response-follow-up (I-R-F) discourse pattern documented by Mehan (1979); Sinclair and Coulthard (1974) and Dillon and Searle (1981) appeared. The teacher posed the question, the student responded and the teacher followed up with an evaluative statement ("Uh uh" or "Good") or by repeating the child's correct answer. There appeared to be no extending of the child's answer.

When the children became confused over "month", "day", "yesterday" and "tomorrow", the teacher attempted to lead them toward the correct answer through an accumulative fill-in-the-blank interaction pattern.

(5) "Month. . . ?"

(7) "The month of. . . ?"

(17) "We're in the month of. . . ?"

(26) "Tomorrow will be. . . ?"

(31, 32) "Sunday, Monday, Tuesday. . . ?"

In attempting to lead the children to a recognition of what day tomorrow will be (35-53), the teacher concluded by giving the answer (49, 50). This was followed quickly by a comment regarding the days of the week-end, a marker ("Okay"), indicating a switch in topic, and an introduction to mat weaving. It seemed doubtful to the researcher whether most of the children heard what tomorrow was or indeed whether they were, at the conclusion of the topic, any less confused regarding the days of the week and the months of the year.

Beyond the teacher-to-whole-class organizational pattern and the initiation-response-follow-up and fill-in-the-blank discourse patterns, the questions themselves provided limited demands for student language. It was only during the observation of the weaving demonstration that the students initiated questions and spoke beyond a monosyllabic response level. The questions in this instance were mainly procedural. For example:

61. Leiha: We're not gonna take it home?

72. Child: You done another one?

78. Child: Do we have to hang them up?

It appeared that talk beyond the procedural or talk that was not defined by the teacher as on task was discouraged.

For example:

65. Child: I've got one at home.

66. Child: Me too.

67. Teacher: Jolayne, will you be quiet?

Focusing upon the nature of the student interaction and more particularly Leiha's role in the episode, a number of interesting observations are worth noting.

Appearing to have confused the categorical terms for days and months (1-15) and having problems correctly identifying what day tomorrow will be, Leiha and the children used a number of strategies in attempting to be the first to state the correct answer.

When one example of a category was declared wrong, the other remaining members of the category became possible right answers. Through the successive random naming of category members, one would eventually arrive at the correct answer.

This appeared to have been the procedure followed in attempting to name what day of the week tomorrow would be (35-52). The children listed all the week-days except Thursday. This day appeared to have been forgotten and was, in this instance, the correct answer.

Similarly, during the letter recognition task (85, 140), after having named the letters, those remaining, that had been previously introduced to the class but had not yet been printed on the board, became incrementally more probable.

Referring to a similar strategy, MacLure and French (1981)

found infant school pupils using what they called an "abstract, a-contextual categorization strategy" by which they were able to determine from the teacher's question a general class of items. Answers were then selected according to their membership in that class and did not result, they state, from the child having reasoned from the teacher's frame of reference.

When the teacher hesitated in our example (116) and quietly asked herself "Okay, what else did we do?" in three separate instances (117, 119, 136), children in the class attempted to hypothesize what letters remained in the category and therefore what might be the next letter printed on the board. They stated their letter choice prior to it being printed and in one instance (117) was correct. Whether the teacher's choice of next letter to review was influenced by the children shouting out seems less important than the fact that some children not only could identify the letters by name but knew which remained to be reviewed in the category.

On four other occasions (141, 134, 132, 128) children in the class attempted to remind the teacher about a letter that, they felt, had not yet been reviewed.

1. Child: (Pointing) Those too. (128)
2. Leiha: You forgot the V. You forgot the V. (132)
3. Child: That one up there, that other U. (134)
4. Child: Oh! (points) Won't you make that one? (141)

The third example is interesting. Despite the fact that the child appeared not to be certain of the name of the

referent letter, she attempted to communicate which one she meant by first indicating where it was displayed and then, by the descriptive phrase "that other U". Although not clear, it appears to suggest a recognition of the letter in terms of its similarity to another letter known by name. As was cited earlier in Section 4.13.3, the child is observed actively making meaning to overcome or compensate for lack of a particular vocabulary term.

The excitement and emotional involvement expressed in the above statement, particularly number four, at the conclusion of the lesson, suggests what Britton (1970) calls:

> . . . the tendency children have of investing any achievement with value for its own sake, a worth-doingness, and to carry it out in a way that capitalizes intrinsic elements in its substance while ignoring its instrumental qualities (p. 84).

Leiha's verbal interaction during the opening exercises was interesting. She was very actively involved throughout, initiating answers (and guesses) and quickly picking up and repeating those of other children. In total, her responses comprised nearly 50% (16/34) of the total student response.

Interestingly, she was the only child observed who verbally followed the teacher's lead-ins which developed when the class appeared unable to guess the correct answer.

1. Teahcer: Month. . . ?

   Leiha: The month. . . .

   Teacher: The month of. . . ? (5-7)

2. Teacher: Sunday, Monday. . . .

Leiha & Teacher: Tuesday. . . ?

Leiha: Wednesday. (31-33)

3. Teacher: Thurs. . . .

Teacher & Leiha: . . . day.

Teacher: Friday, Satur. . . .

Teacher & Leiha: . . . day. (51-54)

Table 4

Frequency and Distribution of Responses During Opening Exercises

Leiha's Responses	Date Questions (N-5)	Alphabet Questions (N-14)
Initiates correct answer	2	8
Initiates incorrect answer	5	1
Repeats another child's correct answer	2	4
Repeats another child's incorrect answer	5	2
Repeats teacher's correct answer		1
Follows teacher's lead-in to the answer	4	
Leiha's total correct responses	4	13
Leiha's total incorrect responses	10	3
Total recorded student responses and lead-ins	18	16

From the analysis, it would appear that despite the limited and simplistic nature of the tasks, Leiha and some of

the children in the class developed strategies for determining the correct answer when they did not appear to know what it might be. These strategies involved a categorizational strategy and, in Leiha's case, following the teacher's lead-ins and repeating answers initiated by other children. In this way, Leiha sustained an active and vocal involvement that was evident in this and most other teacher-to-whole-class interactions.

On the whole, however, Leiha's language and that of her classmates in the context of the teacher-to-whole-class lesson format was limited in quantity, substance and purpose. The only purpose their language appeared to have was to demonstrate "knowledge" by performing fill-in-the-blank and lead-in patterns for the teacher. There was no observed discovery, clarification or reworking of meaning. It would appear, in summation then, that the nature of the tasks and the centrally controlled interactional pattern, in fact, resulted in a restriction of the children's language for learning.

4.17 Leiha's Talk Within Small Group Situations

It was when the children sat together completing seatwork assignments or eating lunch or waiting on the floor to begin a new activity, that most of the negotiating of meaning through talk developed. The activity at hand provided the situation, the reason for coming together. In talking, the children were able to interpret their experiences through talk, to hear and react to the interpretations and the points of

view of other children, and in the process, to clarify and extend their own understandings.

Often, during talk, the children found their settled and accepted interpretations questioned and occasionally directly challenged. The ensuing discussion often served to aid each individual in presenting, and, in the act, clarifying their own understanding. After hearing an alternate view or different information expressed, the process of interpreting this in light of previously interpreted and incorporated understandings seemed to naturally develop out of an individual sense of incongruence, a need to redefine what Britton calls our "world representation". Polyani (1958) says that:

> this urge to satisfy ourselves . . . our craving for a greater clarity and coherence, both in our speech and in the experience for which we speak, seeks a solution to a problem, a solution on which we may henceforth rely (p. 22).

In the act of talking, "solutions" were not, however, always found. Accommodations and indeed interpretations of new ideas presented did not always conclude to the satisfaction of the individual children. They did, however, appear to pursue these issues to the limits of their understanding and perseverance, at that moment. If no "solutions" resulted at least, and perhaps more importantly, inconsistencies and gaps were revealed, previously held ideas shaken and, in the words of Martin (1971), "progress has been made because the mind is now as it were pre-set to be receptive to relevant new

information that comes along" (p. 7).

The extent and nature of the topics discussed when Leiha and the children congregated in small informal groupings were often remarkable. On one day, for example, while weaving mats, Leiha and three other little girls covered the following range of subjects in the process of completing their talk. They discussed, in this order:

1. The number of paper strips they had received.
2. What they were going to do when they completed the activity.
3. The feasts (religious gatherings for prayer and eating) they had at their home or attended elsewhere.
4. The meaning and correct pronunciation of the Cree word "metsuk" (to eat).
5. Occasions when they were sick or in the hospital.
6. The distinction between two shades of blue - "light blue" and "hard blue" (later corrected by the teacher to be "bright blue").
7. Their pet dogs and antecdotes about them.
8. Drunks, the meaning of the term, their locale and "embarrassment".
9. Their weaving errors - whether a weaving strip should have gone "up" or "under".
10. What money they had.
11. Antecdotes regarding siblings.
12. The traditional cultural taboos of whistling at night and the institutional taboos of whistling on the

school bus.

13. A Snoopy movie.
14. Make-up, who has some, who plays with it.
15. Antecedotes about parents.
16. Singing and joking about bumble bees.
17. Enquiries regarding why certain plants were not growing in the classroom.

All four girls, in this instance, took an active and contributing part in the talk.

While congregated in smaller groups, Leiha and the other children not only discussed a host of topics but negotiated their meanings. Throughout the study Leiha and her classmates were observed frequently engaged in an enquiry that they initiated and often pursued to, what appeared to be, the limits of their understanding and competence at that moment.

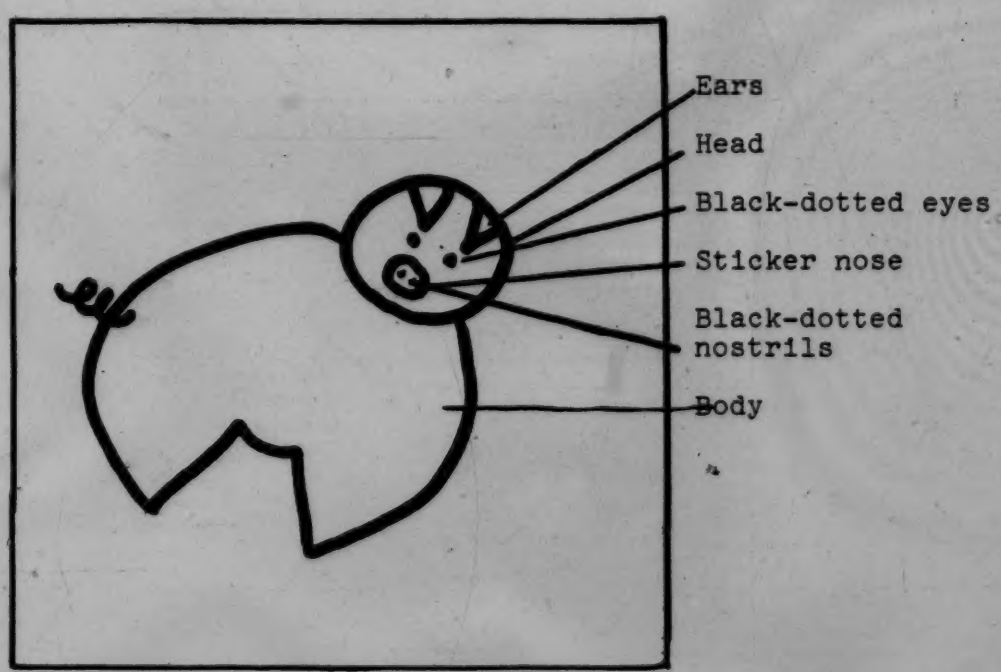
The following sections analyze several of these small group enquiries, highlighting Leiha's role therein.

4.17.1 Making Sense with "Piggy"

The following "chunk" of Leiha's classroom experience and the role of her language therein is presented here to provide an introductory look at the nature and extent of Leiha and her classmates' learning and enquiry during the daily seatwork trace, cut and paste activity. It, in effect, provides an overview of that period of time each morning when the children gathered together in small groups. Throughout the same period, each day of the study, the children were actively involved in the construction of meaning. Within the general,

loosely-structured curricula provided by the kindergarten program, appeared to function simultaneously, a student-initiated curricula. The enquiries for meaning provided school tasks having a somewhat limited learning potential with increased depth and enrichment.

It was 9:15 Thursday morning. John, Nigel, Joey, Daniel and Leiha had taken a pair of scissors and a pencil and were seated at a table ready to begin the cut and paste activity for the day. The teacher had introduced the activity to the 8 students present in the classroom and had shown them an example of the finished product. The teacher-aide arrived to assist in the completion of the task.



The teacher had passed out cardboard patterns for the pig's head and body together with corresponding sizes of colored construction paper. The children were tracing and cutting the two pieces. Leiha had completed the cutting of one pattern piece, but, in the middle of announcing the fact, hesitated.

1. Leiha: I am done with his -- this part.
2. Nigel: (Holding an alternate pattern) And this is the head.
3. Daniel: (Looking at a word printed on the head pattern, asks) Teacher, what does that say?
4. Teacher: "Head".
5. Leiha: (Laughs).
6. Daniel: (Looking at a different word written on the pattern for the body, infers) And the "body"?
7. John: (Laughs) Body.
8. Joey: (Laughs) Is that his body?

(57, 2, 307-312)

In the process of stating (1), "I am done with. . . .", Leiha appeared to come to realize that she did not know and could not therefore specify exactly what she had cut out. Nigel's follow-up statement (2), "And this is the head", in contrast, appeared to have been based upon his being cognizant of what Leiha had cut out and thereby what the

other pattern peice was. His statement (2), although probably unintended by him, had the additional effect of distinguishing the two patterns for Leiha and anyone else that might be listening.

Daniel's enquiry (3) regarding the meaning of "HEAD", followed by his deductive inference (6) that the letters on the other pattern must then mean "body" indicate a developed notion of print as message. Daniel's talk in both instances (3, 6) served to state the inference, to seek confirmation and to identify again the pattern pieces. This was picked up by John and Joey who, noting the shape of the pattern found amusing the incongruency between it and their conception of a pig's body.

As the five children continued to cut, Leiha stated:

1. Leiha: Charlie Brown has a . . . round face. He does.
2. Daniel: Teacher, you know what? We have a dog. We have a . . . a . . . a picture of a dog named Snoopy. He . . . he has a jacket. It says "Joe Cool".
3. Teacher: (Laughs).
4. Nigel: (In a ridiculing intonation) Joe Koo?
5. Joey: Joe Gool? Joe Gool?
6. John: I'll cool it.
7. Teacher: Quiet you. You're not even watching how

you . . . sit there.

8. John: Teacher, us, we . . . we . . . have a picture of these horses.

9. Teacher: Uh huh.

10. John: (Continued) . . . and they're standing up and it says that. It says "Cool".

11. Teacher: Really?

12. Joey: (In a ridiculing intonation, imitates John) Co - o - l?

13. John: No, "cool Luke".

14. Joey: Cool Luke?

15. Teacher: Daniel, pick up your paper.

(57, 2, 312)

In the process of talking, both Leiha, Daniel and John have brought their individual experiences into association with the task, thus infusing it with further meaning. In comparing Charlie Brown to the pig at hand (1), Leiha hesitated momentarily and then appeared to grasp and verbalize the nature of their similarity, what it was in the cutting that made her think of Charlie Brown - the same roundness of their faces.

Leiha's talk of Charlie Brown made Daniel think of his Snoopy picture at home. In the act of telling, Daniel's story became increasingly more specific, from "a dog" to "a picture of a dog" to the naming of the dog, and finally, to a description of his jacket and the lettering "Joe Cool".

It appeared that Nigel and Joey had problems making any sense out of what Nigel heard and restated as "Joe Koo?" (4). John, in what may have been a characteristic cultural play on words to lighten the mood, followed with "I'll cool it" (6). He not only played on the word "cool" but enlarged its meaning with a description of a picture of horses standing and the inscription "Cool Luke".

Vygotsky's (1962) concept of complex, particularly the chain complex, seems to reflect this process of meaning-making, the dynamic, consecutive joining of perceptually concrete factual attributes in a chain of individually-linked meanings, having no centralized or hierarchical order (p. 64). This process of meaning-making is further evidenced as the children continue cutting and talking.

1. Child: Teacher. We have a horse named Bingo. He ran away from us.
2. Teacher: Oh.
3. John: (Repeating with the pretense of remorse) He ran away from us.
4. Child: My dad, he's gonna get another horse.
5. John: (Joking) My bones!
6. Leiha: My bones ran away.
7. Nigel: Your head will be skinny.
8. Leiha: (Giggles).
9. Joey: Your head looks fat.
10. John: No, it looks like . . . it's like (inaudible).

11. Joey It looks like . . . it looks like an orange Nigel, or an apple.

12. John: It looks like . . . he looks like an apple or an orange.

13. Leiha: Or else you look like a banana Joey (giggles).

14. John: Or else she looks like a potato or else. . . .

15. Leiha: Or else . . . or else a chicken.

16. Joey: Oh, shut up!

17. Leiha: . . . and then you go Buck! Buck! Buck! (making clucking noises that closely approximate those of a hen).

(57, 2, 330)

In this episode, John again is found extending the meaning of the discussion through what would appear to be deliberately initiated but spontaneous twists of language and mood (3, 5). Leiha appeared to pick up on John's humorous insert and add her own extension (6). Nigel projected with characteristically dry humor, what might be the consequences if Leiha's bones run away(7). Joey, however, refuted the projected description, supplying a contrasting descriptor (9).

In this case, the category became fruit with Joey, John and Leiha adding members (11-13). As the examples changed from "potato" to "chicken", the humorous collaborative construction of meaning appeared to degenerate somewhat. The

metaphorical descriptors of what a particular individual's head might look like appeared to approximate MacLure and French's (1981) "categorizational strategy" discussed previously (Section 4.16).

The children continued cutting. The teacher began passing out round, colored stickers to be used for the pig's nose. Each child was asked what color he would like. During this time, a controversy concerning the color of pig's noses developed between John and Leiha seated at their table.

1. Leiha: I wanted a black nose.
2. John: Black nose?
3. Teacher: (In background) Throw that paper in the garbage.
4. John: Pigs have . . . um white nose.
5. Leiha: Uh uh, black nose!
6. John: No way!
7. Leiha: Right teacher?
8. Teacher: Yes.
9. John: (Raises voice) White nose!
10. Joey: Skin nose.
11. John: How come I seen a pig, a baby pig. We had one at the . . . at a farm. It had a . . . a mom. A fat pig had taken out a pig and it had (drawls out) - rosy - white - nose.

(57, 2, 378)

As the children hypothesized what color the pig's nose might be, John was quite insistent that a pig's nose was

white, stating that when he saw the birth of a baby pig, it had a "rosy, white nose" (11). Joey's suggestion that the nose might be "skin" (colored) appeared not to have been heard.

Later, after having requested a purple sticker several times, Joey's strong disappointment at having received a green sticker was stated thus:

Joey: (In disappointment) I wanted a purple.

Teacher: Oh well, green is just as nice.

Joey: (In disgust to self) Jesus Christ!

(57, 2, 445)

Joey's subdued but very strong disappointment would appear to indicate the determinate, meaningful, significant, evaluative nature of his color choice. He had repeatedly stated previously that he wanted a purple nose. He had stated so at least six times. He was thwarted and frustrated and required to postpone his request while he recut his pig's head three times, because it was previously considered by the teacher and teacher-aide to be "not nice", to be "too messy". The fact that he persisted with his request for that specific color together with the extremely painful and strong intonation in his voice upon receipt of the green sticker would appear, to the researcher, to indicate the importance and meaning, although unspecified, of the purple sticker to this five-year-old.

As the children continued to add detail to the pig faces,

the question arose as to the existence of pigs' teeth. Intermingled with the passing out of pigs' ears, the talk developed thus:

1. Daniel: Pigs don't have teeth, right teacher?
2. Teacher: (To another child) Here's your ears.
3. Leiha: (Laughs) Do pigs have teeth?
4. Teacher: (To another child in the background) See how the ears are on this one.
5. John: Piggies lose their . . . they haven't. . . .
6. Daniel: Just a few stickin' out, like under.
7. Leiha: Where's my ears?
8. John: Right teacher? Pigs have a little bit of teeth under.
9. Teacher: Uh huh. (To another child) Deanna, where's your's? (regarding construction materials).

(57, 2, 445)

In the process of talking about pigs' teeth, John appeared to have changed his position from one of pigs losing all their teeth (5), to one of pigs having a few teeth hidden under their nose (8).

Initially, Daniel stated that "Pigs don't have teeth" (1). After hearing John state that it was not that pigs never have teeth but rather that "Piggies lose their [teeth]" (5). Daniel qualified his earlier statement. Now he stated that pigs had "a few teeth stickin' out, like under" (6). John appeared to agree with this and unsuccessfully sought

verification from the teacher. Through talking, the two boys were able to verbalize, examine, rework and clarify their own previous understandings concerning pigs' teeth. There was little teacher input and the children, like the preceding issue regarding the color of pigs' noses, appeared to have languaged the topic to the limits of their experience. Throughout the activity the children continued to comment and enquire into the nature and characteristics of the pig's anatomical features.

The teacher and teacher-aide, in contrast, appeared to focus on the technical and administrative aspects of the task, and how closely the children's product approximated that of the model.

Whatever the children appeared to have meaning for them, although the nature of their understanding and individual interpretation was not always apparent to others. When John called Leiha to look at what he had done with what were to have been the pig's ears, the following occurred:

John: Look Leiha.

Leiha: (In surprise) You're gonna put your's like that?

John: Of course, this is a light bulb.

Teacher: (Laughing)

John: My light bulb.

(57, 2, 431)

Leiha appeared to know that the expectations of school and, therefore, the criteria for a "good student" were

contingent upon the neatness of the work done. When asked, while looking at the school yearbook, who was the best student, Leiha referred to the winners of a coloring contest - those students who had been previously judged to have colored the "nicest" fire prevention posters:

Researcher: Which one's in your class are the best students -- do the best in school?

Leiha: He scribbles. He . . . she won two dollars. I won five dollars.

Researcher: Hum . . . for what?

Leiha: 'Member - for making things nice.

Researcher: Oh.

Leiha: This one - she won one dollar. He won . . . three dollars, no n . . . eight. She had eight dollars making her thing real nice.

Researcher: Mmm.

Leiha: Cheyenne and he only won a quarter (laughs).

Researcher: Todd just won a quarter hey? What do you mean making things nice? I don't know what you mean, like. . . .

Leiha: When you color things nice. That's when you win money.

(40, 2, p. 8)

When Leiha attempted to construct a lateral view of the pig, in contrast to the frontal view of the teacher's model, her description of what she was doing was interspersed

throughout the transcription thus:

1. Leiha: Teacher, I only have one eye.

(57, 2, 406)

2. Leiha: His . . . his (other) eye is far away.

(57, 2, 411)

3. Leiha: Mine is gonna be like that (laughs). Nigel, look (laughs).

Nigel: That has big eyes.

Leiha: Teacher! Look it! Mine is gonna be . . . wow!

Teacher: (Looking at glue containers) I don't know if any of these . . . ah . . . these glues can be. . . .

Leiha: (Interrupts) Teacher, I'm gonna be like this. Look it! (laughs - not heard).

(57, 2, 412)

4. Leiha: His mouth is way far over here.

John: Let me see. Mine is gonna have a mouth - a pig mouth.

(57, 2, 425)

5. Leiha: (To teacher-aide) Teacher! Mine will go like this. Okay?

6. Teacher-aide: (Rearranges Leiha's pig's facial features) Like this! See!

Leiha: (To teacher-aide defensively) I didn't glue it (to herself after teacher walks away)

Darn it!

(57, 2, 428)

Leiha's statement that the pig had only one eye (1), that the other eye (2) was "far away", meaning out-of-view, and that the pig's mouth was "way far over there" (4), meaning toward the side of the head (as opposed to the central position of the mouth in the frontal view), suggest an understanding of and a deliberate decision to create a pig from the lateral perspective. Leiha's four unsuccessful attempts to show the teacher her pig (1, 3, 3, 5), plus her defensive statement "I didn't glue it" (6), would appear to indicate that she knew the expectation of uniformity and that her illustration of the pig was contrary to those expectations.

The laughter and excitement with which she showed her pig to Nigel (3), plus the strong intonations of disappointment that were expressed when the teacher-aide re-arranged her meaningful and deliberate organization of facial features, would indicate that she had imbued the task with considerable personal and affective meaning and was deeply disappointed when her creation was destroyed.

As the children worked at their pigs, they continued to infuse the task with meaning, often in the process, challenging the inherent structure of the task.

Leiha: Mine is gonna have freckles.

Children: (Laugh).

John: Mine ain't. It's gonna be black, light black.

Leiha: Pig . . . pigs have freckles! They do!

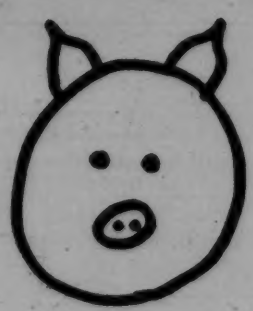
John: Just like Nigel's.

Leiha: All pigs do. All pigs do.

(57, 2, 500)

In another incident, Nigel deliberately arranged his pig's ears pointing up. This was in direct contrast to the teacher's demonstration model which had its ears pointed down.

Teacher's Model



Nigel's Pig

When Leiha and Scotty first observed Nigel's pig, they reacted thus:

Nigel: Just like this. His ears are like this.

Leiha: No way! Cause, look! (pointing to the teacher's model).

Scotty: Well, he'll . . . he'll . . . he'll be like a devil.

(57, 2, 477)

Nigel's conception of the pig's ears pointing up didn't agree with Leiha, who now appears to want to be true to the model, not to Scotty, who thought they resembled a devil's horns.

Nigel, however, was determined his conception was valid and later, while examining an animal chart with the teacher and the whole class, reminded the teacher that they had not observed and discussed the pig (1).

1. Nigel: We forgot the pig.
2. Teacher: Oh, I skipped the pig. (To self) Let me see, oh dear. (To the class) See how their ears hang down?
3. Nigel: (Searching) And they - some of these little guys. . . .
4. Teacher: (Interrupts) The little one's, their's stick up.

(58, 1, 460)

The teacher appeared, as well, to be aware that, for Nigel and some of the other students, the positioning of the pig's ears remained disputed (2). She actively sought and found an example to support her contention that pigs' ears did hang down. Nigel, however, was equally active and quickly found an example of a pig with ears pointing up (3). In concluding, the teacher noted and appeared to accept Nigel's position with the qualifying statement - that it was "the little one's, their's stick up" (4).

Both Nigel and the teacher had engaged in an act of enquiry. Nigel, in particular, questioned the truth of a matter, created an alternative and, in the process of scrutinizing the animal chart, attempted to find evidence to

support his thesis. What appeared absent from both perspectives was an openness to see other possibilities as equally valid from the perspective of the individual. In fact, alternate perspectives were limited if not impossible, within the parameters of the trace, cut and paste activity.

4.17.2 Scientific Enquiry in Small Groups

During the study, particularly while in small group situations, the children were continuously interpreting situations and acting in light of their interpretations. On occasion the process of interpreting took a more concrete form, hypothesis were suggested, tested and confirmed, modified or discarded. This appeared to be done in a natural, informal and unconscious manner. The act of hypothesis proposing and testing appeared to be a normal strategy for successfully executing tasks at hand.

On one occasion, in an attempt to find an additional popsicle stick, to glue onto her bird-house, the following occurred.

1. Teacher: Count your sticks. See if you have six.
2. Child: I do.
3. Child: I have six.
4. Leiha: Some are broken. This one (piece of broken popsicle stick) goes onto this one, right teacher?
5. Teacher: (No response).
6. Leiha: (Attempts to fit two pieces of stick

together). (To self) No.

(50, 2, 342-347)

Leiha found two broken pieces of popsicle stick and hypothesized that they should fit together (4). She attempted to fit them together, found they did not fit and rejected her hypothesis (6).

On another occasion, after having finished eating lunch one morning, a controversy developed between Leiha, Joline and Jolayne concerning who had the smallest feet. In what appeared to be an attempt to save face, to appear to be as big as and, thereby in turn, as competent as Joline, Leiha did, in the process of hypotheses testing, deviate for a moment from the pursuit of truth. However, the strategy remained basically one of attempting to validate or refute hypothesis through empirical investigation.

1. Leiha: (Giggling) Joey! Toey! Toey!
2. Joline: You always have small. . . .
3. Leiha: Uh uh. It ain't small! My feet are bigger, bigger!
4. Joline: (Holds up her foot) Yes it is. Look!
5. Leiha: Uh uh. Cause . . . let's see if yours are smaller than mine (runs to get her shoes in the cloakroom). Same size! Mine is size 11! Yours are small. Mine are . . . a.e . . . um . . . bigger.
6. Joline: Uh uh!

7. Leiha: Sure!

8. Joline: (Holds her foot up to Leiha's foot) Let's see if that's too big for you. See! It's too big for you.

9. Leiha: Watch. I'll show you (muffled). Watch (puts Joline's shoe on). See.

10. Jolayne: (Laughs) Yeah! It <u>is</u> too big for you.

11. Leiha: Uh uh!

12. Jolayne: Yes!

13. Leiha: So, that's how, that's how it's supposed to go. Cause, look (shows the back of the shoe with her heel against the back). Fits. That's how it's supposed to go.

14. Joline: Let me see.

15. Leiha: Now watch me do it? She goes like. . . .

16. Joline: She puts it like this (with heel at the end and the toe area empty). I seen her did it. She puts it like that. . . .

17. Jolayne: These are size 10!

18. Leiha: Mine are size 13!

19. Joline: Well, mine are size . . . look it!

20. Leiha: I'm going to tell you - five? Four?

21. Joline: Four - teen. Size fourteen?

22. Jolayne: (Looking into the shoe) Ay! Only size four!

23. Joline: (To Leiha) more than you.

24. Leiha: Uh uh.

25. Joline: You're more than four.

26. Jolayne: Ah! Yours is size fourteen?

27. Leiha: No. Thirteen.

28. Joline: Mine is size ten.

29. Teacher: Quiet! I want everyone to pick up five or six crumbs on the floor.

(49, 1, 150-191)

When Joline commented on Leiha's "small" feet (2), Leiha strongly objected (3). When Joline held up her foot as evidence to support her contention (4), Leiha ran to the cloakroom to get her shoe as counter evidence (5). At first, Leiha stated that their shoe sizes were the same, after which she announced her precise shoe size and concluded by stating that her's were larger. When the controversy flared up again, Joline held her shoe up to Leiha's foot (8) to support her claim. Leiha countered by trying Joline's shoe on (9). Leiha had to push her foot toward the back end of Joline's shoe in order to appear to have filled up the shoe (13).

When Jolayne reintroduced the question of shoe sizes, Leiha now stated that her shoe size was 13 (18). Joline did not appear to be able to read the size number printed inside her shoe and asked for assistance (19) to read it. When Leiha stated "four" (20), Joline added "teen; size fourteen" (21). Although appearing to have problems reading numbers (she had similar problems another day when attempting to read

the numbers on the calendar), Joline appeared to have some sense of relative size - if Leiha had size 13 shoes and her's were larger, they could not logically be four and must therefore be size 14.

Jolayne was quick to correct Joline. The shoes she had worn to school were size four. Joline could not dispute the sizing, but maintained, in somewhat more subdued intonations, that her shoes were, nevertheless, larger than Leiha's (23).

Regardless of whose shoes were the larger, the girls had, in the process of disputing the fact, engaged themselves in an investigation having many aspects of a scientific enquiry. Although appearing not to know the names of particular numbers, Joline had compared and noted a foot size discrepancy (2), had used as evidence comparable foot length (4), and shoe length (8), had noted Leiha's attempt to distort the evidence (16), and had shown some understanding of the number system.

When finding Joline's shoe size to be possibly bigger, Leiha actively sought additional sources of evidence to substantiate her argument (5). She used not only the comparison of concrete objects but the comparison of more abstract numerical designations (5, 18, 27). When she found that the shoes Joline had worn to school were much larger than her feet, Leiha attempted to fudge the evidence in an effort to support her contention.

4.17.3 Enquiry While Waiting Concerning Teeth, Beaks and Gorilla's Noses

While waiting for the teacher to prepare materials for a trace, cut and paste bird and birdhouse activity one morning,

Leiha and a number of the twelve children present engaged in an enquiry concerning false teeth, beaks and noses.

1. John: You're not supposed to eat candy! You'll get . . . get rotten teeth in your (inaudible).
2. Nigel: I know one guy eats too much candy and he's rotten right here (points at some teeth in his mouth).
3. Cheyenne: Ha! (in a disgusted tone). I'll brush my teeth when I get home.
4. Child: My komom's (grandma's) teeth come out.
5. Leiha: (Watching the teacher drawing) I have that kind of pen, teacher.
6. Teacher: M-m-m.
7. Child: I think my mom's got no teeth.
8. John: (To teacher) My kokom had no teeth and she took out her teeth!
9. Teacher: (Laughs) Oh! Did you get scared?
10. John: No, she . . . nothing bleeding.
11. Teacher: Oh.
12. John: She just threw them on her. . . .
13. Leiha: (Interrupting) My mom's mother. . . .
14. Teacher: (Interrupting) Get back. I didn't ask you to come up.
15. Leiha: My mom, her teeth falls off too and my kokom.

16. Teacher: Oh.

17. Leiha: Everybody's does. Right teacher? Even teacher's does.

18. Nigel: (Inaudible).

19. Teacher: I have to make these circles smaller because these big circles don't fit in our house. So you cut on the red line.

20. Leiha: Oh.

21. Girl: Ah, my kokom gots teeths.

22. Teacher: Mmm hum (still working on the materials).

23. Girl: (Continues) Just some. I count those teeths.

24. Teacher: Hey! Somebody count how many people we have.

(50, 2, 196-50, 2, 221)

In the episode, when the children were talking amongst themselves, it appeared again, as it did during the construction of the pig previously mentioned, that there were at least two different activities evolving simultaneously - the teacher occupied with the technical requirements of the cut and paste task, the children enquiring into the topic of decaying and false teeth, associating their own previous experiences and thoughts on the subject.

The topic developed from John's initial and dire predictions on the effects of eating candy (1), to Nigel's example of a case in point with reference to the specific

teeth involved (2), to Cheyenne's expression of disgust and vow to prevent decay (3), to another child's personal example of the terminal consequences of decay (4), ending, at this point, with another child openly wondering if her mother, too, had no teeth (7).

It appeared that the children, through discussion, had examined the issue, had related it to their previous knowledge of the topic, had pursued the consequences and preventative aspects and, in the case of one child, had broadened her awareness and left her questioning the condition of her mother's teeth (7).

At this point John involved the teacher in the conversation with a personal antecdote about his kokom (grandmother in Cree), taking out her teeth (8). When the teacher asked him whether he felt scared (9), he stated "No" because they were not bleeding (10), an interesting indication as to what he would perceive of as frightening.

At this point Leiha entered the conversation, gave examples of two family members who had removeable teeth (15) and ended with a generalized statement that "everybody's teeth are false, even teachers" (17). Interestingly, Leiha's erroneous conclusion was not questioned or qualified by the teacher, who in fact, appeared to hardly be part of the discussion. This seemed to be highlighted by the fact that when Leiha sought confirmation from the teacher, "Right, teacher?" (17), there was no response.

Leiha's generalized statement was qualified, however, by the following child, who stated to the contrary that her kokom had teeth (21). The child more specifically stated "just some" teeth and then offered proof. "I count those teeth" (23).

At this point several children counted the number of children in the room and the teacher continued assembling and preparing materials for the pending seatwork activity.

While continuing to wait for the teacher, a controversy developed regarding whether the bird to be cut out had a nose or a beak.

1. Boy 1: (Very quietly, while showing something) Look. Just look it.
2. Boy 2: A goola.
3. Leiha: Gorilla! (To Nigel) You have his nose.
4. Nigel: No way! His . . . beak like that - this (points to model of a bird).
5. Leiha: Uh uh. That's his nose. See!
6. Girl: His beak.
7. Leiha: (Laughs).
8. Teacher: (Laughs) His beak.
9. Nigel: (In a ridiculing intonation) Nose! His nose! His nose! His nose!
10. Teacher: (Responding to another child) After.
11. Leiha: This is a nose, right teacher?
12. Child: Uh uh.

13. Nigel: It's like this. It's got the holes.

14. Teacher: (Responding to another child) Mrs. S. will be going out with you at recess.

15. Leiha: Let me see (hesitating pace). These . . . these things (i.e. beak), they have holes like this.

16. Teacher: Uh huh.

17. Nigel: Then they'll be (inaudible).

18. Daniel: (Interjecting) Teacher. You know what? Everytime . . . um . . . Cameron and. . . .

(50, 2, 230-243)

Leiha insisted that the bird had a nose (5, 11), even after the teacher stated that it was a beak (8). Nigel tried to explain that the difference was that a nose had nostrils ("holes") and indicated an example (13). Leiha hesitated, appearing to grope for an explanation that would fit her original interpretation. She finally, haltingly, stated, "Let me see. These . . . these things, they have holes like this" (15). The uneven pace, the stumbling, appear to indicate a working through of new ideas presented, an attempt to accommodate them with her previously constructed understanding.

It was not clear whether Leiha was referring to the fact that beaks have nostrils or simply that birds have nostrils. What is clear is that the children were, to the limits of their understanding, languaging through their understanding

When he reiterated that he was indeed printing a number (3), she openly contradicted (4), at which point he stated emphatically that it was an "eight" (5).

Leiha then watched John print B, L, I, J, O. After he slowly completed each letter, she repeated their names, concluding by asking him "What's that say?" (6). When John said that the letters read "John", it was Nigel who reacted in disbelief (8). John appeared quickly to qualify his statement, "Only John" (9), stating that he didn't know what some of the printing said.

At this point Nigel, appearing to note both the undeciphered print and John's admission of ignorance, in a hestitating pace hypothesized that John might not know his surname (10). The hestitation in Nigel's question "Don't know what your . . . last name is?" (10) suggested that Nigel, in the process of asking, had to clarify specifically what might be a plausible reason for John not knowing what the letters following his first name meant. It was not clear whether Nigel meant to suggest that John didn't know his last name or simply could not spell it. What appears clear is that Nigel was actively engaged in attempting to make sense out of what John had written and why some of it appeared incongruent with his own expectations.

Leiha continued the enquiry by stating that three of John's letters were not "a's" (11, 13). She supported her observation by showing examples of the small-case letter "a",

of noses and beaks. Leiha, in the process, was made aware that birds do not have noses, but beaks. She had to work through for herself, with the help of language, whether or not birds with beaks have nostrils and where these might be located. It would appear that talking had what Martin (1971) calls shaken up some of Leiha's previous misconceptions, leaving her perhaps more receptive in the future to additional relevant information.

In summary, then, it was observed that Leiha and some of the other children, while waiting for their teacher, examined and questioned the cause of tooth decay, the incidence of false teeth and the distinction between noses and beaks. They were observed stating propositions, citing evidence, making generalizations, qualifying examples, and examining evidence. Further, the process of enquiry progressed without adult facilitation and appeared to evolve naturally as the discussion developed.

4.17.4 Enquiry into Print as Message

It was observed on a number of occasions during the study that Leiha and the children had a continually developing sense of print as message.

On one particular morning, while the 13 children in attendance were sitting at tables coloring a mimeographed sheet illustrating objects beginning with the consonant T, the following enquiry developed among John, Nigel and Leiha.

1. John: I have to write all the numbers in this part.

2. Leiha: You going to make a pumpkin?
3. John: (Indignantly) I'm drawing numbers.
4. Leiha: (Surprised) But . . . that's not a number.
5. John: (Emphatic intonation) Eight!
6. Leiha: (Quietly) Oh. . . . (To self, while watching John print) "B, L, I, J, O". What's that say?
7. John: "John"! This. . . .
8. Nigel: (Interrupting in a tone of disbelief) "John"?
9. John: Only "John". But I don't know what this. . . .
10. Nigel: (Sympathetic tone) Don't know what your . . . last name is?
11. Leiha: That's not an "a".
12. John: I know. A, B. A. A".
13. Leiha: They're not "a's". Look, this is an "a". Right? This is an "a". Watch (prints an "a").
14. John: I can make a triangle as an "A"! I can make a triangle.
15. Nigel: This is how my little brother and my name is - my brother's name.

(27, 1, 400 - 27, 1, 421)

From Leiha's perspective, it appeared that what John was printing was not a number, as he had declared (1). She initially interpreted what he had printed as "a pumpkin" (2).

by asking for confirmation ("Right?") and by demonstrating how she printed the letter "a" (13).

John defended his printing by stating that one can make an "A" as a triangle (14), that, in fact, his was an upper case "A". The passage concluded with Nigel showing John his family name - "This is how my brother and my name is" (15). One wonders if Nigel would have thought to bring his family name to John's attention or even to have attempted to print it, had he not been brought to think about last names in his preceding talk with John (10). Nigel appears to have extended his personal enquiry from letters, numbers and first names to surnames, concluding with an example of his family name.

In slightly less than 96 seconds, these three five-year-olds have shown some understanding of the number-letter, upper case-lower case and first name-last name dichotomies.

Further, and perhaps more important for long-term learning, they were able to actively state intention (1), to interpret (2, 4, 10, 11), to question (4, 6, 8), to qualify (9), to describe metaphorically (14), to be aware of what one does not know (9), to demonstrate (13) and to argue for one's position (4, 13, 14). This was all done in a collaborative, interactive mode of enquiry.

4.17.5 Enquiry into Zero and the Letter O

On another day, prior to the commencement of a game of Alphabet Bingo, the following enquiry developed concerning the identification of specific letters and more particularly, the distinction between zero and the letter O.

1. Leiha: Oh, I thought this was a. . . .

2.		(To self, concentrating) Oh, hum . . . what's this?
3.		(Out loud) What's this um . . . um. . . .
4.	Child:	(Imitating) What's that? What's that?
5.	Leiha:	Ssh! Ssh! (concentrating, looking at her bingo card).
6.		What's this, Nigel, F?
7.	Nigel:	L.
8.	Leiha:	Oh.
9.	Child:	(Identifying a letter on her card) G.
10.	Child:	(Identifying a letter on her card) E.
11.	Child 1:	You got zero?
12.	Leiha:	Uh uh. That's 0, right? It's not zero?
13.	Child 2:	Zeros. This is a two and a one.
14.	John:	But it (the word "Bingo") starts with a O and, isn't it right, we can call those zero ones if we want?
15.	Leiha:	Yeah, cause they're O's anyways. And Odia, Odia's name is Odia O.
16.	Child:	Odeo (giggles).
17.	Child:	Here's an O. Here's an O. Right here.
18.	Leiha:	Odia's a singa o. That says "bingo", bingo.
19.	Children:	Bingo.
20.	Leiha:	(Starts to sing) Bingo, Bingo was his name oh. Bingo, bingo, bingo (laughs).

21. Teacher: Okay. Who's got the U, got the first one on here.

22. Leiha: U. Not me.

(56, 1, 079-56, 1, 104)

In the process of perusing her bingo card, Leiha appeared to have come upon a letter she could not identify - "Oh, I thought this was a -" (1). Her voice lowered. In a slow, deliberating, concentrating tone, she appeared to be asking herself and simultaneously attempting to remember what the name of the letter might be. In the midst of asking out loud "What's this um . . . um . . . ?" (1), Leiha's voice again lowered and faded away as she studied the bingo card. In an effort to sustain her concentration, Leiha shushed the mimicing comment of a neighboring child (5). She continued to concentrate on the unidentified letter. Finally, after a few seconds, she appeared to re-emerge from thought and asked "What's this Nigel, F?" (6). Again, as discussed previously (Section 4.3, page 65), Leiha's enquiry was not phrased as a simple direct question, "What's this Nigel?" but as a hypothetical statement seeking confirmation - "What's this Nigel - F?" (6). Nigel, at once, refuted the hypothesis and indicated the name of the correct letter with the simple answer, "L" (7). In the background, one could hear other children identifying the configurations on their bingo cards (9, 10).

At this point, a child looked at Leiha's card and stated,

"You got zero" (11). Leiha disagreed, "Uh uh, that's O, right? It's not zero?" (12). Another child appeared to agree with the first, logically reasoning that the circular configuration could be called "a zero" because in the same context there were two other numerals, "a two and a one" (13). It was unclear, from the tape or the field notes, to which configurations the second child (13) was referring since the bingo card had letters rather than numbers printed on it. What is important, however, is the fact that the second child had made the logical inference that if there were a two and a one, then the configuration in question must be numeral zero rather than the letter O.

John, however, appeared to be focusing upon the O at the end of the word "bingo" (14). In this context the configuration would more likely be an O rather than a zero, and this appeared to be the intent of his argument. It was interesting that he referred to the location of the "O" in "bingo" as being at the "start" of the word. Whether he, in fact, was reading from right to left or had simply confused the term "start" for its opposite, "end", is less important than what appears to be another logically reasoned interpretation - that the circular configuration, because it was found amongst other letters in the word "bingo", must therefore be a letter "O" (14).

The latter part of John's statement is interesting (14). After having logically argued why the circular configuration

was probably a letter O, he appeared to dismiss the contentious issue, speculating that one could call it a zero if one wanted to. Leiha concurred (15). She appeared to state that it did not matter what one called the circular configuration because when one said Odia's name, one could hear the "O's" (sound) anyways" (15). She reinforced her argument by stating that "Odia's name is Odia O" (15) in which case one would hear the letter O sound twice.

The talk appeared to have inspired one child who indicated "Here's an O. Here's an O. Right here" (17).

Leiha, in the voice of an expert, stated "Odia's a singa O" (18). Did she mean single? At this point she appeared to read the word "bingo", to repeat it and then to lapse into song.

When the teacher began the bingo game with the letter U, Leiha puns "U. Not me" (22), a fitting and culturally characteristic lightening of mood after a somewhat lengthy and serious interchange (see Section 4.12.2).

4.17.6 Making Sense of Drunks While Weaving

While weaving at a table, Leiha began talking with the teacher about her dog, Dino, and how he was shot. As Leiha talked, the teacher moved away to help some children at another table but the talking continued amongst Leiha, Deanna and Cheyenne as they dealt with the issue of drunks.

1. Leiha: Teacher, you know what? Our little . . . um . . . our . . . our puppy, his name is

Dino, like . . . Fred Flintstone's dog, his name is Dino, and um . . . um . . . he got shot.

2. Teacher: (Moves away to the next table) Oh.
3. Leiha: (adds) . . . from a drunk. He shot him.
4. Deanna: A drunky?
5. Leiha: (Emphatically) No, a drunk!
6. Deanna: Oh, I though you meant a drunky, not a drunk.
7. Leiha: Don't you know what it means?
8. Deanna: What?
9. Deanna: Lots of drunks.
10. Leiha: There's a whole bunch at the townsite.
11. Cheyenne: Yes and they drink. Some, they're embarrassed.

(46, 1, 128-143)

Leiha prefaced her antecdote with a phrase frequently used by the children during the in-school observations - "Teacher, you know what?" French and Woll (1981) term this an "opener" or "story preface" (taken from Sacks, 1974). They state that it is one of a number of strategies children use to gain access to conversation time with adults. The "you know what" strategy, they state, because it normally requires the person addressed to respond with a further question, i.e. "What?", usually guarantees, for the child, not only conversational space, but a direct or implicit

invitation to proceed.

French and Woll (1981) state that:

> We are crediting the child with both a fair degree of knowledge about linguistic communication and the ability to apply that knowledge in the development of strategies for overcoming problems he faces as a child (p. 175).

They further state that during their development to adulthood, children may first need to "go through a period in which they develop and put to use interactive strategies which are sensitive to their status as children" p. 175).

Leiha's delivery appeared disjointed and choppy. It could be that she was considering and clarifying the incident in her own mind as she talked. It could also be that the emotional nature of the subject influenced her delivery, or, alternatively, that she was anxious to rush ahead and occupy the conversational space before someone else did.

As Leiha spoke, she gradually included more detail - from "our puppy" to "his name" to "the origin of his name" (1).

Deanna appeared to mix the word "junky" with "drunk", creating the term "drunky" (4). When she asked for clarification (4) the girls each began to contribute their individual meanings for "a drunk". Deanna added that there was a sizeable number ("lots"). Leiha indicated where she thought many of them could be found (10). Cheyenne agreed and stated what drunks do (i.e. drink). Cheyenne's last comment "And some they're embarrassed" (11) added an evaluative, affective and empathetic element to the growing

concept of drunks. Her intonation suggested a sympathetic attitude toward the alcoholic.

The conversation enabled the children to verbalize and, in the act, to bring together and pool their individual experiences and interpretations. It allowed them to gradually build up what Vygotsky would call a complex or aggregation of meanings that form the material from which, in adolescence, concepts develop.

4.17.7 Making Sense of Plants on Doors and Windows

While eating lunch one day, John attempted to tell Leiha and the girls at his table, about the new flower boxes his family had installed on the windows and door of their house and the plants they were planning to grow there.

1. John: We're gonna grow plants on our door and at the windows 'cause we put some things on our doors.
2. Children: (Laugh).
3. Jolayne: You're trying to make money at that?
4. John: No, dummy!
5. Teacher: Girls!
6. Girl: That's nice.
7. John: Oh, oh. I'm going to pray my mom's not crazy!
8. Girl: I'm not crazy.
9. Girl: Thought you are.
10. Girl: (To self) Flowers on . . . flowers on the

house?

(36, 1-492 - 36, 1-506)

The girls initially found the idea amusing. Jolayne appeared to question why one would do this and hypothesized that it might be for monetary gain (3). She was actively attempting to understand what appeared, from her perspective, to be very unusual. John rejected Jolayne's interpretation strongly (4). The suggestion of motives of monetary gain appeared to offend him. The next girl's evaluative and perhaps diplomatic comment "That's nice" appeared to lighten the mood and John added, in a characteristically humorous way, "Oh, oh. I'm going to pray my mom's not crazy!" (7). The following girl, responding to this, stated "I'm not crazy" (8). This was quickly countered in a continuation of the humorous mood, "Thought you are" (9). At the conclusion, as the tape ended, one of the girls appeared to be verbalizing to herself - "Flowers on the house?" (10). It appeared as though through talk she was attempting to hold on to that idea, to "run it through her mind" in an effort to make more sense of it. She, it appeared, would now be more sensitized, more receptive to any new information that might clarify this new and novel issue of plants at doors and windows.

4.17.8 Enquiry Concerning the Meaning of "Metsuk"

While Leiha and some other girls were weaving baskets one day, a controversy developed concerning the correct

meaning of the Cree word "metsuk". Jolayne used the word while discussing a feast her family had held after the death of an uncle. Jolayne could, in this context, have meant the Cree word "metsuk" meaning to eat or the similar word "emetsuk" meaning a feast or cultural ceremony where one gathers to pray and eat, for example, after the death of an extended family member or upon the anniversary of such a death.

Although Jolayne's specific meaning was not clear, the enquiry that developed from the controversy over terminology provided a further example of the children's continual attempt to interpret their experiences and refine and validate their present understandings.

The discussion developed thus:

1. Cheyenne: (To Jolayne) Right, me and you know Lawrie? Right? Me and her know Lawrie. We keep . . . we have a feast at our house - and I'm playing with them at our house.
2. Jolayne: Us, we had a feast at . . . um . . . our house and we're going to have a metsuk.
3. Leiha: A what?
4. Jolayne: (With deliberate enunciation) A me - a <u>metsuk</u> - at our house.
5. Deanna: I don't know what "suk" means.
6. Jolayne: That <u>means</u> a - that means a feast cause my uncle died.

7. Leiha: (With strong disagreement) Uh uh! That means eat! "Metsus" - that means eat.

8. Jolayne: That means a feast, too!

9. Leiha: (Shakes her head).

10. Jolayne: Yeah! Yes! Yes!

11. Leiha: Ask teacher. She'll say no. (Referring to weaving) Hey, did we get mixed up?

(45, 2, 470 - 45, 2, 484)

After Cheyenne inadvertantly introduced the topic of feast, Jolayne extended the discussion, contributing related information from her background experience (2). When Leiha asked for clarification of the terminology (3), Jolayne, very slowly and with careful enunciation, repeated "metsuk" (4). When Deanna, repeating only the last syllable of the word, stating that she did not know what "suk" meant (5), Jolayne explained with increased specificity. She supplied a synonym and an example of why, in this particular instance, the feast was being held (6). Leiha, insisting that Jolayne's meaning was incorrect, indicated her definition of the word and demonstrated her pronunciation (7). Jolayne countered by stating that "metsuk" could mean eat and feast too. Both girls insisted they were correct.[1] The enquiry was at a standoff. It required the input of an authority in the Cree language - the teacher, a parent or someone else who spoke

---

[1]When I discussed the controversy with Leiha's mother, she felt that Jolayne's pronunciation may have been more correct.

fluent Cree to resolve.

Although this enquiry appeared somewhat circumscribed by Leiha's insistence that she was correct, the girls exhibited a number of valuable strategies nonetheless in pursuit of the meaning of "metsuk". Through a languaging out of the topic the girls set about to negotiate the meaning of an emetsuk. They associated past experience (2) and they sought (3, 5) and attempted to provide clarification of terminology, both pronunciation (4, 7) and definition (6, 7).

Through the discussion the subtle variations of meaning of "metsuk" were brought to the attention of the girls. Although unresolved, they may now be more aware of these terminologies and receptive to future nuances of pronunciation and usage.

4.17.9 Enquiry Concerning "A Statue Car?"

While the children were coloring a short-a vowel work sheet, Daniel attempted, through a verbal inquiry, to make sense out of Leiha's clandestine drawing on the back of her paper.

1. Daniel: This looks like a Christmas tree.
2. Leiha: (Giggling) A Christmas tree!
3. Daniel: Is it not a real Christmas tree?
4. Leiha: (Giggling) No, that's a statue, you dummy.
5. Daniel: A statue car?
6. Leiha: (Giggling) It is a real car but this is a statue on it.

7. Daniel: (Strong, determined intonation) I know but is it a statue car, (inaudible) . . . car?

Daniel had interpreted the object on the front of Leiha's car as a Christmas tree (1). Leiha found the idea hilarious. She had difficulty throughout the dialogue controlling her laughter. Daniel's interpretation appeared from Leiha's perspective to be hilariously absurd.

When Leiha attempted to explain to Daniel that what she had drawn was a statue, in effect a hood ornament (4), Daniel took the new information and again hypothesized, "A statue car?" (5). Leiha attempted to be more precise - "It's a real car but this is a statue on it" (6). Daniel's last statement was interesting. He, with some irritation, strongly insisted that he knew the car was real but, nevertheless, "Is it a statue car?" (7). From the transcript, it is difficult to know what Daniel meant by his hypothesis, "statue car". Leiha was so taken by the mirth of the matter, she did not enquire. It would appear, at this point, that Walkerdine and Sinha's (1981) observation is relevant:

> Interpretations constructed by individual children in school are varied and complex and should not be underestimated. If a particular child does not appear to make sense, we suggest that it is because we have not been able to gain access to the categorization procedures in operation, rather than because the child is making non-sense (p. 201).

From Leiha's gales of laughter, Daniel made no sense. His questioning appeared so absurd as to be hilarious. In fact, from what Daniel said, it appeared that both Leiha and

the researcher simply did not yet have sufficient information with which to access Daniel's frame of reference.

4.17.10 Making Sense of Blue Teeth

It was interesting to observe how Leiha made sense of information she received from others.

One morning, in the cafeteria, Leiha and her sister bought several round bubble-gum. After chewing some, Leiha's teeth discolored to a blue tone and the researcher remarked:

Researcher: Oh, your mouth is going to be all blue and your teeth!

Leiha: Mmm.

Researcher: And . . . and you know what's going to happen to you two girls?

Leiha: What?

Researcher: When you're teenagers and when you smile. . . .

Odia: (Interrupting) I'm gonna be a teacher when I grow up.

Researcher: When you're a teenager and when you smile, all your teeth are going to be black.

Odia: I'm going to brush my teeth all morning.

Leiha: (Laughs).

(50, 1, 360-370)

Later on that same morning, during the lunch period in kindergarten, a number of little girls were chewing bubble-gum. In response to this and appearing to have remembered

the researcher's reaction to her own blue-colored teeth earlier that day, Leiha responded in this way:

1. Leiha: Don't eat that - too much of that blue. You know why? Your teeth will - when you grow up your teeth will be black all over - when you're a teenager. But you have to have some . . . some water or something.
2. Child: Like juice, papoose, cagoose (laughs). Drink some goose.
3. Children: (Laugh).
4. Child: Daboose.
5. Joline: I washed it off.
6. Leiha: Uh uh, not your's won't do that! Just her's cause she has blue bubble-gum.

(51, 1, 399-410)

From the transcript, it would appear that Leiha heard and remembered what the researcher had told her earlier that morning. In the process of talking and putting to use what she heard, she was reshaping the new information in her own words and attempting to make sense of it (1).

Interestingly, it appeared, from her explanation, that she had interpreted the information and hypothesized that it applied exclusively to blue gum (6) and not to any other color of gum. In the act of talking and using the early morning information, Leiha was extending and reshaping the new information in this instance somewhat erroneously.

4.17.11 Making Sense of the Microphone

It was interesting to observe how Leiha made sense of the small, cordless microphone she wore during the study.

On the first day of the study, while the children were sitting on the floor listening to the news, one of the students asked about the microphone Leiha was wearing. The child attempted to touch the microphone, at which point Leiha protested.

1. Leiha: Don't!
2. Child: Take it out.
3. Leiha: No!
4. Child: What's that?
5. Leiha: I'm supposed to keep it on.
6. Child: What's it for?
7. Leiha: I'm supposed to keep it on.
8. Child: That seems funny.
9. Leiha: My aunty bought this for me.

(1, 1, 58-60)

The little boy appeared to tackle the question of the unknown black object in a logical manner. He first asked Leiha to remove the object in what would appear to be an attempt to examine it more thoroughly (2). When his request was denied, he asked for more information - what it was called (4) and what its function was (6). He concluded with the evaluative statement "That seems funny" (8).

At this point Leiha had only seen and worn the microphone

for two minutes. She knew neither the name, nor the function of the little black object. Knowing neither its name nor its function, Leiha appeared to answer the question with the only information available to her. She knew that she was supposed to keep it on (5, 6) and that her aunty bought it for her (9).

About 15 minutes later, while still sitting on the floor listening to a rhyming story, Put Me in the Zoo, a little boy touched Leiha's microphone and stated:

1. Boy: Ah! You growed hot!
2. This thing growed hot!
3. It got hot dog.

(1, 1, 313-315)

The little boy corrected his first statement, attributing the heat to the microphone rather than Leiha directly (1, 2). He concluded with a joke - "It got hot dog" (3). Leiha made no comment.

About half a hour later, while sitting on the floor again, listening to a recorded story of Snow White, Leiha first drew attention to the microphone.

1. Leiha: (Points) look .
2. Boy: What's that?
3. Leiha: It's something.
4. Boy: (Attempts to touch)
5. Leiha: Don't! You can't pull it off.
6. Boy: I want to see.
7. Leiha: Don't!
8. Boy: What's it called - that?
9. Leiha: You don't have to know.

10. Boy: Do you . . . do you know?

11. Leiha: Huh?

12. Boy: Do you know what it is?

13. Leiha: (Nods).

14. Boy: Tell us then, when . . . when it's. . . .

15. Teacher: Ssh! Ssh!

16. Boy: (Whispering) When it's break, okay?

(1, 2, 246-265)

Leiha, at this point, could not identify the microphone (2, 8, 10, 12). She appeared to use several tactics to avoid admitting that she did not know. She gave an evasive answer (3), she stated that the boy didn't have to know (9), and, finally, she appeared not to hear the question (11).

About an hour later, while cutting flowers for a Get Well card, Leiha responded in this way to enquiries regarding the microphone.

1. Boy: Hey, what is that?

2. Leiha: What? This?

3. Boy: Yeah.

4. Leiha: It's my aunty's thing!

5. She put it on me.

6. She hanged it on me.

7. Boy: What's it for?

8. Leiha: I don't know. . . .

9. (Suddenly) It's to make me warm!

10. Boy: Really?

11. Leiha: Yeah.
12. Girl: Leiha, what's that on your T-shirt?
13. Leiha: It's to make me warm.
14. Aunty bought it for me.
15. (Makes noises) Oh, wowee!
16. It will get me cold for awhile.
17. Then I'll get warm.

(2, 2, 251-261)

At first Leiha repeated her earlier answers to enquiries about the microphone (1). She called it "aunty's thing" and simply stated that aunty put it or hung it on her (4-6). When asked what it was for, she at first stated that she did not know (8). At this point, however, she suddenly appeared to remember the other little boy's earlier observation regarding the warmth of the microphone. She now hypothesized that it was something to keep her warm (9).

This, however, appeared to contradict the feeling of cold she felt when the microphone was first clipped onto her clothing and the cold wire tucked under her blouse.

When a second enquiry was made (12) regarding the microphone, Leiha appeared to be attempting to reformulate her ideas in such a way as to make sense of the conflicting observations. By qualifying her statement thus, she stated, "It will get me cold for awhile. Then I'll get warm" (16, 17).

On the following school day, Leiha still didn't appear

to know the name of the little black object the researcher had clipped to her clothing. When asked what it was, during her free play period in an adjacent classroom, she continued to state "I don't know. Keep me warm" (3, 2, 462). A short time later one little boy asked Leiha:

Boy: Hey! What do you got? Do you have a batterytation?

Leiha: No.

(4, 2, 135)

In this instance, it appeared that this little boy had not only attempted to make sense of the small black object, but had, what Chukovsky (1963) called, creatively invented a word that revealed competence in adapting a suitable suffix (p. 6).[1]

About a month later, when asked what she was wearing, Leiha answered "This thing is . . . yeah, it's a microphone" (27, 2, 191). Later that same day, while building a block house, her cousin asked:

Gerid: What are these for?

Leiha: While I'm talking and then my . . . and it goes in that (i.e. tape recorder) and then it's talksin.

(28, 1, 288)

Leiha's understanding of the microphone appeared to have

---

[1]Leiha appeared to exhibit a similar competence when she argued that "metsuk" was really "metsus" (Section 4.17.8).

increased considerably since she first began wearing it. In answering Gerid's question, she appeared to have received considerably more information and worked out for herself the process by which her voice was recorded by the tape recorder.[1]

4.18 Leiha's Talk with Self - Vygotsky's "Egocentric Speech"

During the study, children were not only observed talking to one another to make meaning, but were often found talking to themselves in distinctly lower volumes. This appeared to be what Vygotsky terms "egocentric speech" and took several different forms. At times it accompanied the child's activity, appearing to help her focus or regulate the task at hand.

1. While preparing for a game of bingo, Leiha appeared better able to grasp the number of markers she needed in relation to the number of markers she had, by quietly reasoning the situation to herself.

Leiha: How much do you need?

Teacher: (Thinking) Mmm.

Leiha: Five?

Teacher: Yes, five.

Leiha: Okay, 1, 2, 3, 4, 5, (to self). There's three - two more.

(56, 1, 063-068)

---

[1]For a further example of how Leiha enquired and came to a fuller understanding of the microphone and the recording process, see "Making Sense of the Indicator Light (Section 4.9.1).

2. On another occasion, after asking the researcher to read the word "flatfoot" stamped on a piece of bubble-gum, Leiha walked around looking at the word, alternately repeating it slowly to herself and then showing it and repeating it equally slowly but out loud to a classmate.

   Leiha: (To self) Flatfoot.
   (Out loud) Look Joey! Flatfoot (laughs).
   (To self) Flat-foot (laughs and mutters something to herself). (Out loud) Oh, look! Flat-Foot (laughs).

   (48, 1, 322-329)

Leiha appeared, in this case, to be familiarizing herself with both the spoken word and its written form.

3. While urged by her teacher to try to be early for a pending field trip, Leiha appeared to use a subdued talking to herself to determine what time would be earlier than nine o'clock.

   Leiha: What time do we come?
   Teacher: The bus leaves at nine o'clock.
   Leiha: Nine o'clock. (whispering to herself) 1, 2, 3, 4, 5, 6, 7, 8, 9. (Out loud to teacher) I'll come at 8.

   (39, 1, 461)

4. While weaving construction paper mats, a little boy commented that he too was weaving his strips of paper

under the frame. Leiha impatiently responded that one did not only weave "under" but "up" (i.e. over). This appeared to influence the weaving activity of the boys at the adjacent table. A second boy first repeated the directions to himself in a reflective tone and then, while drawing the words out in deliberate and extended phrasing, proceeded to feed his paper strips "up then under".

Boy 1: We're doing that too - putting them under.

Leiha: (Impatient and exasperated intonation) Not only under - up and under - boy!

Boy 2: Up and under? (to self) U-p - t-h-e-n - u-n-d-e-r.

Boy 1: Up and under.

Boy 3: You mean like this?

(The boys continued a muffled talk in the background).

(45, 2, 485-489)

At times, the egocentric talk preceded the activity, appearing to aid the child in planning and preparing for a task.

1. While completing the bird in the birdhouse cut and paste activity, Leiha draws some additional features.

Leiha: One cloud now the sun (to self) No, the rainbow.

(51, 1, 121)

4.18.1 Egocentric Talk While Playing with a Puzzle

On occasion, egocentric talk interlaced an activity, assisting in both planning prior to task and focusing during task.

One particularly lucid example of this occurred while Leiha was in the process of searching for and inserting variously-shaped plastic blocks into their correspondingly-shaped holes in a Tupperware puzzle. After having taken down the puzzle and spilled the blocks, the activity began:

Leiha: (To self) There's one. Now I'll start with one. One. Turn them all around so I can see the numbers.

(2, 1, 112-114)

At this point Leiha appeared to be talking to herself in order to focus on block number one, in order to keep block number one in mind while she organized the other blocks. Her talk, at this point, also appeared to be ahead of the action, to have taken on a planning function.

Leiha: (To self) Two - no seven. Okay, where does one . . . ? One . . . t-w-o - two . . . where?

(2, 1, 116-120)

As Leiha completed rotating the blocks so that all the numbers were upright and readable, she commenced the actual activity with a common framing device - "Okay". At this point, her talk appeared to have the effect of swinging her concentration back to the beginning to the start of the task.

She took block number one. "Okay. Where does one (go)?" Finding the appropriate hole, she pushed block number one in as she simultaneously said "One". She searched for block number two, scanning the nine blocks in front of her and saying in long, drawn-out phrasing, "t-w-o". This seemed to both reflect and focus her attention as she looked for block number two. Now, having found it, she repeated the number "two" as she searched for the corresponding hole within which to insert it.

Child: Right there. This goes right there.

Leiha: Don't! Dont tell me! I'm going to have to learn myself. (Out loud) T-w-o! T-h-r-e-e! - and f-o-u-r! (To self) four. (Out loud) F-o-u-r! F-i-v-e! S-i-x! (To self) six. (Out loud) S-i-x! S-e-v-e-n! Don't show me (To self) seven.

(2, 1, 121-133)

At this point another child watched Leiha's effort and attempted to help her. Leiha strongly insisted that she wanted to complete the task herself. She did not want any assistance.

As she continued to search for the blocks and their corresponding holes, her search was accompanied by the verbalization of each particular number in long, drawn-out extension. This appeared, again, to facilitate, accompany and reflect her concentrated search. When a number was somewhat more

difficult to locate, Leiha's extended focus appeared to be aided and reflected by a quieter, more to self repeating of the number. As a block was inserted into the correct hole, its number was often repeated again.

Child: This . . . this one first.

Leiha: Uh uh. E-i-g-h-t- (to self) eight, nine - oh yeah, that was nine. Ten, ten (singing) t-t-ten.

(2, 1, 133-139)

In this last excerpt, Leiha's egocentric talk not only helped her focus on locating and inserting the blocks, but also appeared to help her keep track of where she was in the sequence, what she had completed, and what remained to be done. As she inserted the final block, she ended with a song.

4.18.2 Egocentric Talk While Beading

On the first day of the school observation, Leiha, together with two other girls, remained inside the classroom at recess. During most of the 35 minute period, Leiha occupied herself beading a necklace (i.e. stringing red and white beads onto a thread).

At the commencement of recess, Leiha approached the researcher and announced her intended activity.

Leiha: Look it. I'm going to make a necklace and I'm going to put these together.

Researcher: That will be pretty. How do you make a necklace?

Leiha: You get a piece of string down and . . . um

> . . . you put it through these holes. See, there's all kinds of different beads. (To self) This piece of string is all tangled up. There. I'll just make a little necklace.
>
> (2, 1, 164-173)

After examining and comparing a box full of Easter chicks made from egg cartons, Leiha continued planning her necklace.

> Leiha: (To self) Now I better put these (beads) in the middle cause there's no more of these. Somebody used them all up. (singing) Hi yo hi ho hi ho hi ha ha ha ha.
>
> (Roshie enters the classroom)
>
> Hello Roshie! (To self) Use that one later. Oh! Wrong one (puts bead aside).
>
> (2, 1, 204)

Throughout the rest of the recess period, Leiha and Roshie, later joined by Odia, maintain a continual flow of talk while Leiha continues beading.

1. They "read" the alphabet and described the illustrations on two "m" and "p" phonetics charts.
2. Leiha helped Roshie complete a puzzle.
3. The girls talked about:
   1) why they were staying in,
   2) a pending feast for one of the children's relatives,

3) the whereabouts and activities of the researcher's sons,
4) the differences between Leiha and Odia's jackets,
5) the circumstances surrounding a recent accident Leiha had when she fell down the steps at kokom's house,
6) a Wake Roshie wasn't allowed to attend,
7) the meaning of "a Wake",
8) the derivation of several relatives' nick-names and Indian names,
9) various relatives,
10) hickies and pizzas,
11) the play furniture that Leiha's uncle made,
12) Roshie's "cuddly doll",
13) desirable and undesirable playmates,
14) kokom's dog and aspects of aging,
15) cleaning up the classroom.

From time to time throughout the talk, Leiha had to bring herself back to the beading in hand. At these times, her talk seemed to be for herself. Such egocentric talk appeared to reorient her to the task. It allowed her to assess her progress and to plan the next move.

1. "What's that one? Okay. Blue Now."
(2, 1, 234)
2. (Disgusted intonation) "S-s-s- I put two! I need a

blue."

(2, 1, 282)

3. "What color?" Red . . . ah . . . red and. . . ."

(2, 1, 435)

4. "It's hard to make in here. Can't even make it."

(2, 1, 445-446)

5. "What color now? - red."

(2, 2, 067)

6. "Yellow? ' Oh, not yellow. Where's blue?"

(2, 2, 079)

7. "This is the middle, right here . . . Uh uh. No these are not. Only blue and red, only blue and red. . . ."

(2, 2, 355)

While talking to herself, Leiha's egocentric talk appeared to function to help her to focus, to surmise a situation and plan her next move (1, 3, 5, 7); to locate error, reformulate and rework inconsistencies (2, 6, 7); and to encourage herself to persevere (4).

4.19 Summary of Talk in School

The observation, recording and analyses of Leiha's talk in school over a 14 day period indicates an active, confident, articulate five-year-old who used her language to extend her understanding continually in specific situations within the daily school program.

Leiha's talk was recorded within a school context that

was characterized by little specific deliberately-structured, teacher-to-child interaction involving individuals, small groups or the whole class. The daily program tended to follow a predictable format, centering around a trace, cut and paste or mimeographed seatwork assignment. The organization and nature of the kindergarten curricula, although appearing somewhat limited in nature, allowed for extensive and spontaneous talk amongst Leiha and her classmates.

Although comprising only 3.48% of the total observed at-school program, an analysis was made of the nature and extent of Leiha's talk in one teacher-to-whole-class lesson situation. The episode analyzed was chosen by the researcher as representative of the seven other observed lesson situations and appeared to have somewhat greater student involvement.

It was found that, in this situation, the previously documented initiation-response-follow-up discourse pattern predominated with the teacher controlling the situation by question-initiation, delegation and a sequential, accumulative, fill-in-the-blank interaction pattern that appeared designed to lead the students toward the correct response.

It was found that Leiha's responses, and those of the other students, in this situation, were monosyllabic. In what appeared to be a strategy to be the first to shout out

a correct answer, the children's responses often appeared to be selected at random for a predetermined category that appeared to function as a pool of possible correct answers.

An extensive analysis was made of Leiha's talk within various small group situations, particularly while completing seatwork assignments, eating lunch and waiting during transition periods between activities. It was found that Leiha and numerous other students that she interacted with, were frequently engaged in a collaborated negotiation of meaning. Through talk, Leiha and a number of other children were observed observing and noting detail, comparing, associating and generalizing, interpreting situations, projecting, inferencing and forming hypotheses, questioning situations, reworking information, projecting, explaining and evaluating.

It was found that Leiha and her classmates' talk involved an extensive and varied range of topics. Permeating much of the enquiry was an underlying current of humor that often involved twists of language that appeared to contribute to the children's meaning-making on a social, emotional and cognitive level.

Finally, Leiha appeared frequently to use talk to herself, what Vygotsky calls "egocentric speech", as a tool to assist her in planning, focusing upon and reworking information.

4.20 Comparison of Leiha's Language at Home and at School

A comparison of Leiha's languaging at home and school would suggest differences related to the extent and range rather than the nature of quality of Leiha's talk within the home and school contexts. From the study, it appeared that both Leiha and the other children she interacted with were often engaged in a collaborative construction of meaning, both in and out of school. The on-going and continuous nature of this meaning-making appeared to reflect what Donaldson (1978) calls, "a fundamental human urge to be effective, competent and independent, to understand the world and act with skill" (p. 113). Throughout the study Leiha's meaning-making and that of the other children she interacted with, appeared to reflect not only a deliberate intent and perseverence to come to an increased understanding, but, in addition, a humorous and often joyful affective quality that appeared to lighten the mood and extend the meaning.

The particular character of Leiha's kindergarten class allowed for considerable talk in small groups, not always possible in some schools, as indicated by previous studies (Dillon and Searle, 1981). This talk, in many instances, indicated similar active attempts to negotiate meaning requiring the interpretation of situations through comparison, inference and hypotheses-generation.

Within the classroom setting, however, it appeared that the children's attempts at making, reworking and extending

their understanding through talk were usually extra-curricular in nature. That is to say that the languaging of ideas often occurred without apparent planning or intent by the teacher and occasionally despite explicit demands to reproduce the product or refrain from talking. The predominant result of the seatwork assignments, by encouraging a highly uniform end product, appeared to be the suppression of creativity and the exclusion of individual perspectives and frames of reference. The limited nature of teacher-to-child talk beyond the technical and administrative aspects of the task at hand resulted in no observation of deliberately school-structured language situations designed to extend, enhance or supplement the child's ongoing attempts at meaning-making.

The children's limited monosyllabic responses characteristic of the teacher-to-whole-class opening exercise period appeared to reflect the limited nature of the demands imposed by the task rather than the children's language competence.

This was in direct contrast to the extensive range of languaging exhibited by Leiha and the other children while eating, waiting or completing seatwork assignments in small groups. Because this was not a planned part of the programme, much of this talk appeared not to be noticed by the teacher.

The potential of the classroom situation for meaning-making was considerable. The small numbers of children per teacher, their interesting and somewhat complementary out-of-school experiences, their mutual communality resulting from a

high incidence of relatedness through family ties, their genuine observed curiosity and willingness to collaborate and their display of a range of powerful tools for learning, suggest a valuable, largely untapped potential within the classroom.

Leiha's out-of-school meaning-making, in contrast to her in-school life appeared to be more extensive in both the range and depth of experience. Within the home, she was allowed considerable independence and assumed quite a lot of responsibility for a five-year-old. She chose her own clothing and dressed herself, relating her choice at different times to considerations of climatic conditions, aesthetic quality, or availability. She made light snacks in the kitchen (e.g. grilled cheese sandwiches). She occasionally washed, dried and put away the dishes. She carried the laundry basket up and down three flights of stairs from bedroom to laundryroom and vice versa. She vacuumed the floors and "tidied" the house. She watered the garden, searching, finding and connecting pieces of hose which did not leak and would extend to the garden. In play, she was allowed to roam throughout the house and environs with little parental restriction. For example, during a game of hide-and-go-seek, she hid in the top shelf of the linen closet, in the bottom drawer of a dresser and, via the bedroom window, onto the roof of the house. During play she ran or biked considerable distances from the house, across the field to the trees (two kilometers approximately), down the road to

the neighbor's (approximately one kilometer), and to the nearby "dump" (approximately two kilometers). She planned and dug, with the assistance of her playmates, an igloo tunnel system. She attempted to construct and float a raft. She helped in the planting and weeding of the garden. She went with kokom to the local bingo. She modelled clothes in various centers. She attended rodeos, pow-wows, hockey games, swimming, skating, feasts, birthdays and other festive and familial gatherings where she talked with a multitude of relatives of varying ages.

Within this context, there appeared often to be a warm responsiveness and respect for individual differences. Leiha often initiated and controlled the processes of enquiry and meaning-making. She appeared to be continually generating hypotheses based upon logically-reasoned deductive inferences requiring verification. Within the school setting this enquiry-making appeared to be circumscribed by the nature of the curricula. The out-of-school environment, in contrast, appeared to be much more conducive to the ongoing development and negotiation of meaning.

Chapter 5

Summary, Conclusions and Implications

In this chapter the findings relevant to the research questions will be summarized. Conclusions will be drawn from the findings based upon the theoretical position presented in Chapter 2. The implications of the findings in relation to the child's use of language for learning at home and at school will be discussed and suggestions for further research in the area will be offered.

5.1 Summary of the Study

5.1.1 Question #1

What is the nature and circumstances of the child's enquiry at home and at school?

Home discussions and enquiry tended to be characterized by a high degree of child initiation and an underlying reciprocity and cohesion indicative of participants' attempts to understand and be understood. Because of the nature of the extended family on the reserve and particularly within her own family, Leiha appeared to have an extensive range of opportunities and situations for talk, often involving the warmth and responsiveness of interested family members and friends.

Leiha's involvement in various investigations and enquiry appeared to result from her natural curiosity and

that of the other children with whom she interacted. A particularly interesting and important aspect of the ongoing enquiry observed was the amount of interest and joyfulness with which it was infused. Although Leiha and at least one other child voiced some awareness of the repetitive and limited nature of the seatwork assignments at school, Leiha and the children often appeared to involve themselves in the task-at-hand, infusing it with their own personal interest and meaning. It appeared, in effect, that the official teacher-determined curriculum was transformed by Leiha and each of the other children into an individual, personal, student-developed curriculum. Each child brought her own past experience, present interest, understanding and frame of reference to bear on the task at hand. Leiha and many of the children engaged in an interested, collaborative, often joyful investigation that appeared to provide tasks, having a somewhat limited learning and motivational potential, with increased depth and enrichment.

It was found that, at school, during the seatwork activity, lunch and the transition periods between activities, Leiha and the children engaged in considerable talk and enquiry in a collaborative interactive mode.

During the school observation there appeared to be little specific, deliberately-structured teacher-to-child interaction. Teacher-to-child languaging often tended to be centered around the administrative, disciplinary and

technical aspects of the task-at-hand.

During the teacher-to-whole class lesson situation, Leiha's and the other students' talk tended to be monosyllabic and generally limited in purpose. Verbal interaction tended to be characterized by the initiation-response-feedback and fill-in-the-blank discourse patterns. There appeared to be little reworking or extension of the children's understanding during this time.

5.1.2 Question #2

What language strategies does Leiha use to shape her experiences at home and at school?

Leiha was continually observed interpreting and inferring from her experiences, seeking verification of her hypotheses and generating new interpretations in light of this experience. These interpretations would come in the form of interrogative statements, direct questions, direct questions followed immediately by a hypothetical answer and, finally, by declarative statements followed by the interrogative idiom "right?".

Leiha took an active involvement in a number of investigations. She observed and interpreted situations; noted, manipulated and monitored possible variables; re-interpreted hypotheses in light of additional information and in some instances was able to conclude the enquiry for the moment with what appeared to be, for her, a satisfactory explanation of the situation.

Leiha and the children with whom she interacted were observed actively engaged in an ongoing attempt to make sense of their world. In an effort to understand it, they were found conducting enquiries in what appeared to be a natural, informal and unwitting manner. The act of hypothesis proposing and testing appeared to be a natural strategy for successfully executing the task at hand or pursuing the topic of enquiry.

Frequently the interpretation and verification of experience would involve the gradual, cumulative construction of meaning through talk. While involved in languaging through her experiences with others at home and at school, Leiha was observed relating her previous experiences to the topic under discussion, logically modifying her observations and statements, explaining and supporting particular viewpoints or behavior, noting and describing detail, comparing, citing alternatives, projecting and explaining cause and effect, sequencing and, finally, planning and organizing her experience through language.

Leiha was observed using talk to herself (what Vygotsky calls "egocentric talk") before, during and after an activity. Egocentric talk appeared to aid focusing upon a task, in regulating her activity, in familiarizing her with new terminology or ideas, in planning and preparing for future events and in reflecting and evaluating prior experience. Leiha appeared, in effect, to use talk to extend, refine,

rework and modify her understanding.

Leiha and several other children were observed playing with the sound, rhythm and meaning of words. She was observed joking and punning. This appeared to be encouraged by and grow out of a rich, culturally-derived joking behavior having considerable potential for making and extending meaning. Leiha was observed varying her accent, rhythmic intonation and pronunciation in different situations. Although she did not appear aware of the change, register or dialect-shift appeared to reflect an aspect of the meaning of the situation for her.

During the school observations, Leiha and the other children were observed using what MacLure and French (1981) have called "an abstract, acontextual categorizational strategy." The children would occasionally attempt to find the answers to a question by first determining the possible category from which the answer originated. Initially answers might be randomly selected from category members. The probability of correctly answering the question increased as the pool of possible answers diminished. In this instance, the children were observed guessing what might be the correct answer from the remaining category members (e.g. members or letters).

In addition to this, Leiha was observed following the teacher's lead-ins and repeating answers initiated by other children. Also, she often informed the teacher as to her

accomplishments. In this way, she sustained an active and vocal involvement during school and appeared occasionally to be perceived to know when she may not have known.

5.1.3 Question #3

What are the similarities and differences found regarding the nature and circumstance of the child's enquiry outside and within the school environment?

Leiha at home and at school appeared active, confident, and vocal. Both at home and at school, Leiha and those with whom she talked, covered a considerable range and variety of topics. Because there was little organized teacher-to-child interactions, the small group languaging observed at school displayed similar characteristics to the talk that developed out of school. The topics and collaborative exchange of meaning appeared to develop spontaneously from the tasks at hand.

Differences between the home and school talk would indicate that the kindergarten program provided less depth and scope of experience within which to language through and rework new ideas than did the out-of-school environment. The school environment did, however, bring together a greater number of peers showing a variety of interests and background experiences. Because the nature and expectations of the curriculum tended to focus on the uniformity and neatness of the product rather than the process by which the students come to increase understanding

through talk, Leiha and the other students' ongoing enquiry appeared extracurricular and perhaps somewhat restricted. Although comprising only 3.48% of the observation time, Leiha's language in the context of the teacher-to-whole-class lesson format appeared much more limited in quality, quantity and purpose than did the child's language in small groups and out of school. The nature of tasks and the centrally controlled interaction patterns appeared to restrict the children's language for learning.

In contrast, while talking in small groups, Leiha and the other children were frequently observed initiating and pursuing an enquiry. They were found continuously interpreting situations and acting in light of their expectations. They were observed questioning, suggesting alternatives and searching for evidence.

5.2 Conclusions of the Study

Because this study focused on the language of one five-year-old, generalization from the results must proceed with caution.

In this study it was found that this five-year-old:

1) was continually inferring and seeking verification of these inferences in order to make sense of her experiences,
2) used her language to compare, sequence, suggest alternatives, state cause and effect, generalize and project in the course of her daily activities,

3) collaborated in the joint construction of meaning while languaging with others,
4) used language-to-herself in order to focus, orientate, plan and organize her activity,
5) brought to the kindergarten a wealth of experiential and linguistic knowledge, and a curiosity and interest to explore and enquire that was restricted by the demands of the kindergarten curriculum.

5.3 Discussion of the Results

This study was conceived and conducted in the belief that explorative studies are preliminary to change. Each year hundreds of children of Indian ancestry "fail" within the school system. Evidence of their lack of success can be seen in statistics for rates of absenteeism, age-grade retardation and school drop-outs. Often various cultural or linguistic deprivation theories are cited as an explanation for the persistence of this problem. The consequences, however, of labelling children as "verbally deprived" or "culturally disadvantaged" are to divert attention away from the ineffectiveness of the school program; to reduce one's expectations of the child's capabilities; to provide a simplified, lock-step, watered-down curriculum designed to provide remediation for hypothetical deficiencies; to view the child as empty and having little of significance to contribute to her own learning. A deficiency perspective in education prevents the teacher from seeing and listening to

the child's ongoing attempts to make sense and come to an increased understanding. A deficiency perspective assumes that the teacher is the active transmitter of knowledge and the child can best learn by keeping quiet and sitting still.

This study does not paint such a negative and gloomy picture. It was conceived on the premise that there was too much "life" in the students and children of the researcher, all of Indian ancestry, to be dismissed as deficient or inconsequential. Although initiated with the question "let us see what the children can do", the results of this study far exceeded the expectations of the author. While focused upon the language and learning of Leiha, many of the other children around her at home and at school appeared to be engaged in similar active processes of interpreting, hypotheses-testing and inferring.

Donaldson (1978) supports the observations of this study when she states that:

> all normal children can show skill as thinkers and language-users to a degree which must compel our respect so long as they are dealing with real life meaningful situations in which they have purposes and intentions and in which they can recognize and respond to similar purposes and intentions in others (p. 121).

What appears of crucial significance in this study is not simply that Leiha and the other children were continually making sense of their world using very complex reasoning processes but also that, firstly, language played a fundamental role in their meaning making and that, secondly,

the school did not appear to expect, demand or be cognizant of the children's meaning making.

If children are naturally and continuously interpreting their experiences and revising these in light of new information, if in effect what the children are learning is unlikely to be identical to what the teacher is teaching, it is fundamental in teacher effectiveness that she be as cognizant as possible of the child's frames of reference, understanding and interest in the topic at hand. An important implication of this study then is that the teacher and school consciously, actively and continuously listen to what the children are meaning. This was not observed to be happening to any significant degree during this study. This requirement to listen is much more complex than might be at first realized. It involves questions of why the teacher must listen, what he must listen for and how he should listen. It involves looking below the child's surface level language, beyond the expressive explorative gropings of the child to his deeper, more personal efforts to make sense. It involves an initial, basic re-evaluation of our concept of what children are and how we, as human beings, learn. It implies a fundamental reassessment of our present methods and perspectives in teacher education. The planning of effective learning environments must begin from and in light of the teacher having some knowledge of what and where the children are.

Further, and related to the first implication, are the implications for curriculum development that can be drawn for this study, particularly as it is related to the child's use of language in the structuring of her experiences and in the increasing of her understanding.

It appears from the observations of this study that Vygotsky's concept of the role of egocentric speech in the development of thought may have considerable validity. From the language samples documented, Leiha's talk to herself and with others served as a valuable, if not essential, tool in the focusing and directing of her attention, in the substantiation of her ideas and in the clarification and reworking of her interpretations.

In talking out her ideas to herself or with others, Leiha was able to hear them, to concretize them, as it were. The languaging out of ideas appeared to give substance to her thoughts, to help clarify their meanings for her, to aid her in the assimilation of new information resulting in a refinement of her present level of understanding. Talking to herself appeared to have the additional function of focusing and directing Leiha's activity. Language served a complementary function as the repository for new relevant experiences and ever-evolving word meanings. In moments of reflection, the meaning of a word influences the shaping of one's activities and the interpretation of one's experiences. Over time, the word meaning and its experiential referent

evolve, mutually influencing the other.

Talk to oneself and to others appeared from the perspective of this study to be essential to learning. If the child has need of hearing herself think through hearing herself talk, this would seem to suggest that sufficient time and attention must be given to structuring and implementing learning activities that encourage and extend the students' opportunities to talk through to learning.

5.4 Suggestions for Further Research

1) Little naturalistic, well-grounded research has been conducted from the perspective of the student in the school. Findings from this study would suggest that more replicative studies from the student's perspective would revolutionize our concept and approaches to learning within the school.
2) Leiha was a very confident, articulate child. Of equal interest were the "quiet children" she interacted with at school. With the aid of the cordless microphone, several rich and interesting chunks of language were recorded from these children. Further study, within a naturalistic non-threatening environment, might further dispel still widely-accepted theories of incompetence and deficiency.
3) The joking behavior of some of the children was particularly interesting to the researcher. Further study regarding the function this plays in the

children's meaning making would be enlightening, particularly for educators of native children.

4) The role of the teacher in supporting and extending small group discussion would be a valuable area of future investigation.

5.5 Concluding Statement

This five-year-old Plains Cree child was observed actively involved in making sense of her experiences. She used her language not only to communicate with others, but to work through her own ideas and structure her experiences. In a comparison of her in-and-out-of-school learning experiences, it appeared that the school did not expect and provided limited opportunities for the collaborative construction of meaning.

References

Barnes, Douglas. "Language and Learning in the Classroom" in A. Cashdan et al., Language in Education, A Source Book. London: Open University Press, Routledge and Kegan Paul, 1972.

Barnes, D. From communication to curriculum. Toronto: Penguin Education, 1976.

Barnes, D., Britton, J., Rosen, J. (eds.). Language, the learner and the school. London: Penguin Paper in Education, Penguin Education, 1969.

Basso, Keith H. Portraits of "The Whiteman". Cambridge, Massachusetts: Cambridge University Press, 1979.

Bellack, A., Kliebard, J., Hyman, R., Smith F. The language of the classroom. New York: Teacher's College Press, 1966.

Bereiter, C. and S. Engelmann. Teaching Disadvantaged Children in the Pre-School. Englewood Cliffs: Prentice-Hall, 1966.

Bernstein, B. "On the Classification and Framing of Educational Knowledge.: in M.F.D. Young (ed.), Knowledge and Control: New Directions for the Sociology of Education. London: Collier MacMIllan, 1971.

Bernstein, B. Class Codes and Control Vol. 2: Applied Studies Towards a Sociology of Language. St. Alban's: Paladin, 1973.

Bernstein, B. and Henderson, D. "Social Class Differences in the Relevance of Language to Socialization" in Basil Bernstein, Class, Codes and Control, Vol. 2, London: Routledge and Kegan Paul, 1973.

Berry, Kathleen S. Oral Language and Lnaguage of Grade Five Students in Small-Group Discussions. Unpublished Masters Thesis, Department of Elementary Education, University of Alberta, 1982.

Boydell, D. Teacher-pupil contact in junior classrooms. British Journal of Educational Psychology, 44, 1974, pp. 313-18.

Britton, J. Language and learning. London: Penguin Books, 1970.

Bruner, Jerome. On Knowing: Essays for the Left Hand. Boston: The Belknap Press of Harvard University Press, 1962.

Bruner, J.S. Introduction to Vygotsky, L.S., Thought and Language. Cambridge, Massachusetts: M.I.T. Press, 1962.

Bruner, Jerome S. The Course of Cognitive Growth. In A. Cashdan et al., Language in Education, A Source Book. London: Open University Press, Routledge and Kegan Paul, 1972.

Cazden, C., John, V.P., Hymes, D. (eds.). Functions of language in the classroom. New York: Teachers' College Press, 1972.

Chukovsky, K. From Two to Five. Translated by Miriam Morton. Berkeley and Los Angeles: University of California Press, 1963.

Delamont, S. Interaction in the classroom. London: Methuen, 1976.

Department of Indian Affairs and Northern Development. Indian Conditions: A Survey. Ottawa: Minister of Indian Affairs and Northern Development, 1980.

Dillon, D. and Searle, D. The role of language in one first grade classroom. Research in the Teaching of English, Vol. 15, No. 4, December, 1981, pp. 311-328.

Donaldson, Margaret. Children's Minds. Glasgow, Fontana/ Collins, 1978.

Edwards, A.D. Language in Culture and Class. London: Heinemann Education Books, 1976.

Edwards, A.D. Teaching Styles and Communicative Disadvantage. Paper presented at the British Education Research Conference, University College, Cardiff, September, 1980.

Edwards, A.D. "Patterns of Power and Authority in Classroom Talk" in P. Woods (ed.). Teacher Strategies. London: Crook Helm, 1980.

Edwards, A.D. What the sociology of education has to say to classroom teachers. Language Arts, Vol. V, May, 1982, p. 513.

Edwards, John R. "Judgments and Confidence in Reaction to Disadvantaged Speech" in Language and Social Psychology, edited by Howard Giles and Robert St. Clair. Baltimore: University Park Press, 1979.

Edwards, A.D. and V.J. Furlong. The Language of Teaching: Meaning in Classroom Interaction. London: Heinemann Educational Books, 1978.

Fishman, J. and Lauders-Salmon, E. "What has the sociology of Language to say to the teacher? On teaching the standard variety to speakers of dialectical and sociolectal varieties", in C. Cazden, V. John and D. Hymes (eds.), Function of Language in the Classroom. Teachers' College Press, 1972.

Flanders, N. Analyzing teaching behavior. London: Addison-Wesley, 1970.

French, Peter, and Bencie Wall. "Context, Meaning and Strategy in Parent-Child Conversation" in Wells, Gordon. Learning Through Interaction. The Study of Language Development. Cambridge: Cambridge University Press, 1981.

Giles, Howard and Thakerar, Jitindra, N. "Language Attitudes, Speech, Accommodation and Intergroup Behavior: Some Educational Implications." Language Arts, Vol. 20, 1980.

Giles, Howard, Hewstone, Miles and St. Clair, Robert. "Cognitive Structures and Social Psychology of Language: Integration Models and an Overview." In Speech and Its Social Psychological Significance, edited by Howard Giles and Robert St. Clair. Hillsdale, New Jersey: Erlbrown, 1981.

Goodhall, P.E. Some Dimensions of Expressive Language. University of Calgary Language in the Classroom Project: No. 3, 1977.

Hawkins, P.R. "Social class, the nominal group and reference in Basil Bernstein, Class, Codes and Control. Vol. 2, London: Routledge and Kegan Paul, 1973.

Hawthorn, H. et al. A Survey of the Contemporary Indians of Canada: Vol. II. Ottawa: Indian Affairs Branch, 1967.

Hughes, M. in Barnes, D. From communication to curriculum. Toronto: Penguin Education, 1976.

Hymes, Dell. Forward to Keith H. Basso, Portraits of "The Whiteman". Cambridge, Massachusetts: Cambridge University Press, 1979.

Indian Chiefs of Alberta. Citizens Plus. Edmonton, Alberta: Indian Association of Alberta, 1970.

Jackson, P.W. Life in classrooms. New York: Holt, Rinehart and Winston, 1968.

Kelly, G.A. A Theory of Personality. New York: W.W. Norton and Company, 1963.

Kluwin, T.N. Research on the language of the English classroom: a disconnected dream. Paper presented at the combined annual meeting of the Conference on English Education and the Secondary School English Conference, Pittsburgh, Pa.: March, 1979, p. 18 [Ed. 176 280].

Labov, W. "The Logic of Non-Standard English" in W. Labov, Language in the Inner City: Studies in the Black English Vernacular. Philadelphia: University of Pennsylvania Press, 1972a.

MacLure, Margaret and Peter French. "A Comparison of Talk at Home and at School" in Wells, Gordon. Learning Through Interaction. The Study of Language Development. Cambridge: Cambridge University Press, 1981.

Martin, N., P. Medway, H. Smith. From information to understanding. Schools Council Project Writing Across the Curriculum, 11-13, 1971.

Mehan, H. Learning Lessons: Social Organization in the Classroom. Cambridge, Massachusetts: Harvard University Press, 1979.

Philips, Susan V. Teasing, Punning and Putting People On. Working paper in Sociolinguistics. No. 28. Sponsored by the Social Science Research Council Committee on Sociolinguistics. Austin, Texas: Southwest Educational Development Laboratory, December, 1975.

Polyani, Michael. Personal Knowledge. Chicago: University of Chicago Press, 1978.

Pooley, R. in Marvin L. Klein. Talk in the language classroom. ERIC, National Council of Teachers of English, Urbana: 1977.

Robinson, W. Peter. "Social Class Markers in Speech" edited by Scherer, Klaus R. and Giles, Howard. Social Markers in Speech. Cambridge: Cambridge University Press, 1979.

Robinson, W.P. and Creed, C.D. "Perceptual and verbal discriminations of "elaborated" and "restricted" code users. In Basil Bernstein. Class, Codes and Control. Vol. 2, London: Routledge and Kegan Paul, 1973.

Rosenthal, R. and L. Jacobsen. "Self-fulfilling prophecies in the classroom: teachers' expectations in unintended determinants of pupils' intellectual competence" in Deutsch, Katz and Jensen, Social Class, Race and Psychological Development. New York: Holt, 1968.

Ryan, Ellen B. and Carranza, Miquel, A. Intergroup and Out-Group Reactions to Mexican American Language Varieties. In Language Ethnicity and Intergroup Relations, edited by Howard Giles. New York: Academic Press, 1977.

Searle, D. Two contexts for adolescent language, classroom learning and the discussion of extra-school experience. Unpublished Ph.D., London: University of London, 1981.

Silva, K., Roy, C., and Painter, M. Child watching at play-group and nursery school. Oxford Preschool Research Project 2. Grant McIntyre, 1980.

Sinclar, J. McH. in R.H. Coulthard. Towards an analysis of discourse. London: Oxford University Press, 1975.

Stubbs, M. Language, Schools and Classrooms. London: Methuen, 1976.

Szasz, T.S. The Second Sin. London: Routledge and Kegan Paul, 1974.

Tough, J. Focus on Meaning. London: George Allen and Unwin, 1973.

Tough, J. The Development of Meaning. London: Halstead Press, 1976.

Trudgill, P. Accent, Dialect and the School. London: Edward Arnold, 1976.

Vygotsky, L.S. Language in thought. Translated by Eugenia Hanfmann and Gertrude Vokar. Cambridge: M.I.T. Press, 1962.

Vygotsky, L.S. Mind in society. Cambridge: Harvard University Press, 1978.

Walkerdine, V. and C. Sinha. Developing linguistic strategies in your school children in Wells, G., Learning through interaction: The study of language development. Cambridge: Cambridge University Press, 1981.

Wells, Gordon. "Comprehension: What It Means to Understand." English in Education, Vol. 10, No. 2, 1976, pp. 24-36.

Wells, Gordon. "Language use and educational success: an empirical response to Joan Tough's, 'The Development of Meaning' (1977)." Research in Education, 18, 1977: 9-34.

Wells, Gordon. "Talking with Children: The Complementary Roles of Parents and Teachers". English in Education. Vol. 12, 1978: 15-36.

Wells, Gordon. "Describing Children's Linguistic Development at Home and at School." British Educational Research Journal, Vol. 5, No. 1, 1979: 75-89.

Wells, G. Learning through interaction. The study of language development. Cambridge: Cambridge University Press, 1981.

Williams, Frederick, et al. Explorations into the Linguistic Attitudes of Teachers. Rowley, MA: Newbury House, 1976.